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HISTORIC STRUCTURE REPORT CCC BUILDINGS



U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE





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historic structure report

1988

by

Laura Soullière Harrison
Architectural Historian

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Historical Architect

Roger Buck
Landscape Architect

CCC BUILDINGS
BANDELIER NATIONAL MONUMENT · NEW MEXICO

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE /
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PREFACE

A number of people helped us prepare this document. We thank Superintendents John Hunter and José Cisneros and the staff of Bandelier National Monument for their assistance during the research phases and their patience during the building investigations and construction phases. Virginia Robicheau helped us sift through the Bandelier photo archives and provided technical assistance throughout the project. Chris Judson copied a number of the historic photographs for our research. Bill Sweetland assisted us in figuring out the probable content of the elusive Pojuaque mud mortar and may have even discovered the borrow pit it came from. David Paulisson helped us keep track of project expenditures. The late Mrs. Evelyn Frey, who lived in the canyon for nearly six decades, furnished considerable information on the buildings from the time of their construction to the present. Architect Jared Morse gave us a sense of what Bandelier was like in the 1930s.

Alison Kerr, archivist at the J. Robert Oppenheimer Library of Los Alamos Laboratory, was indispensable in providing documentation for the 1940s uses of Frijoles Canyon Lodge. Dr. and Mrs. Richard Taschek of Los Alamos furnished insight into life in the canyon during the summer of 1943, at the early stages of the Manhattan Engineer District project. Hedy Dunn and Linda Aldridge at the Los Alamos Historical Society gave free access to the information they had in their files. Edie Ramie of the Denver Service Center (DSC) and Mary Greenwalt and Marsha Druker of the Rocky Mountain Regional Office assisted us in getting information out of old federal filing systems. Sherry Smith-Gonzalez of the New Mexico Archives and Records Center helped out with a series of good research leads. Thanks to Jay Bright and George Thorson of the DSC for approving the project. Particular thanks go to Melody Webb, former regional historian for the Southwest Region, for her constant support and constructive criticism.

Undoubtedly, we owe our greatest debt to retired National Park Service (NPS) architect Lyle E. Bennett (deceased) and to the Civilian Conservation Corps (CCC) forestry foreman Jim Fulton. Their enormous contributions to the study made the past come alive. More important, their hard work in the 1930s left us with an enduring landmark of the New Deal.

Laura Soullière Harrison
Architectural Historian

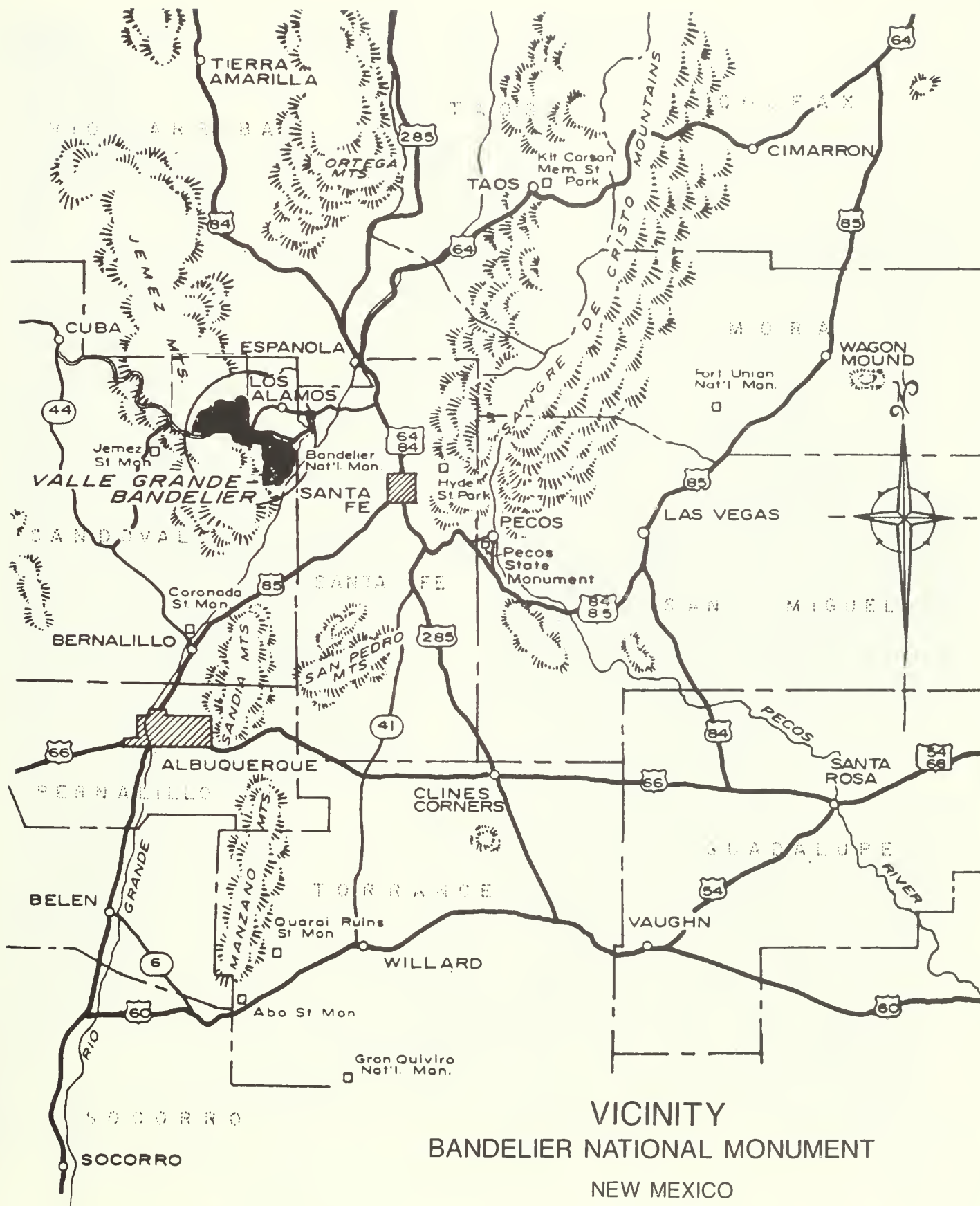
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REGION

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INTRODUCTION

The Civilian Conservation Corps (CCC) building complex sits at the bottom of Frijoles Canyon and forms the general interpretive introduction to the significant cultural resources of Bandelier National Monument (figure 1). The park's other noted features – its natural and geophysical resources, which are integrally linked to its cultural resources – are obvious as one travels the mesa and descends into the canyon. For years, the subject buildings received little recognition as historic structures significant for their own intrinsic merit, an understandable fact given the value of the park's resource – the prehistoric Indian ruins of the 12th to 16th centuries. However, this situation has changed, and the buildings are now considered historically and architecturally significant structures consistent with the park management objective to "preserve and maintain the cultural and natural features of the monument." The buildings are nationally significant. In 1987 the secretary of the interior designated the group a national historic landmark district. Included in this study area are the 31 CCC buildings in Frijoles Canyon in the residential, administrative, maintenance, lodge, and campground areas, and the fire lookout and entrance station on the entrance road. The landscape features in the immediate vicinity of the residential, administrative, lodge, and main parking area are also included. Excluded from this study are the campground, entrance road, and surrounding landscape features.

The earliest 20th century development in Frijoles Canyon was a small ranch known as Ten Elders, which belonged to a retired judge named Abbott. Mr. and Mrs. George Frey bought the ranch from the Abbotts in 1925 and turned it into a guest ranch. This ranch, located on the edge of Frijoles Creek near the Tyuonyi ruins, approximately 1/4 mile upstream from the current visitor center, afforded limited accommodations to canyon visitors. Early access to the canyon floor was via steep foot and horse trails more than a mile long opposite the ranch. A small tramway for supplies and the later 1930s entrance road opened the monument to a larger public. The subsequent need for expanded visitor services and the required park administrative and operational facilities led to construction of the building complex. Initiated in 1934, the growth of this complex continued over the next eight years, resulting finally in 31 buildings, which, to a large degree, have maintained their original functions. With the exception of interior partitions, color scheme, roofing, and utility modifications over the years, the buildings basically reflect their historic appearance.

The 31 buildings fall into four basic locational groupings: the headquarters, cabin, canyon, and entrance road areas. The only exception is the comfort station (B-1) in the Cottonwood picnic area, west of the headquarters area. The entrance road area contains the fire lookout (B-30) and entrance station (B-26), and the canyon area contains five residential units (B-7, B-8, B-10, B-11, and B-32) and the park stables (B-25). The headquarters area contains eight service-oriented buildings (B-3, B-4, B-5, B-6, B-12, B-13, B-14, and B-22), the visitor center and museum (B-2), comfort station (B-9), administrative headquarters (B-15/16), curio shop and snack bar (B-17), and VIP quarters (B-18). These latter two buildings historically belong with the remaining eight buildings (the cabin area), because they are part of the complex originally built as the cabin and hotel development area. Today, three of these buildings (B-19, B-20, and B-28) are residential quarters, B-24 and B-27 are combination residential-office use, B-23 and B-29 are offices, and B-21 has been converted to a laundry and storage facility. Excluding the two entrance road structures, the overall complex encompasses approximately 8 acres.

This report is only one component of the current five-part Development/Study Package 224. Other components include rehabilitation of water, sewer, electrical, and gas services; rehabilitation of decaying wood structural members; rehabilitation of flagstone and curbing; and installation of insulated windows and fire alarm systems. These other four components are scheduled for design and construction over several years. Because of the intended focus of this historic structures report and subsequent construction work, the following findings and observations are based on class B investigations, as defined in part IV of *National Park Service Professional Standards*.

The basic format for this document is that of NPS-28, slightly modified for this project. The first section contains the administrative data. It is followed by a short narrative history of the buildings and a summary of their significance. Other sections include the physical history of the buildings, including site and building-specific data, a discussion of existing conditions, treatment recommendations, a framework for assessing accessibility and adaptive use issues, and recommendations for further study. An annotated bibliography is provided.



Figure 1. This 1987 aerial photograph of the CCC building complex at Bandelier National Monument shows the majority of the structures and their layout around the central parking plaza. The structures are nestled into the narrow building site in Frijoles Canyon. The rito (creek) serves as the western edge, and the talus slopes of the canyon cliffs define the eastern edge. Some character-defining features of the pueblo revival style are evident, including the courtyards, parapets, building masses, and terracing.

ADMINISTRATIVE DATA

NAMES AND PROPOSED USE OF STRUCTURES

| <u>Bldg. no.</u> | <u>LCS no.</u> | <u>Date begun</u> | <u>Original name/use</u> | <u>Current name/use</u> | <u>Proposed name/use*</u> | <u>Size**</u> |
|----------------------|--------------------|-----------------------|---|---------------------------------------|-------------------------------|---------------|
| B-1 | 23272 | 1934 | Comfort station | Same | Same | 500 |
| B-2 | 23231 | 1935 | Headquarters | Visitor center | Same | 5,000 |
| | | 1936 | and museum | | | |
| B-3 | 23230 | 1935 | Maintenance warehouse | Same | Offices | 1,200 |
| B-4 | 23229 | 1936 | Garage and blacksmith shop | Carpenter shop and welding shop | Same | 1,100 |
| B-4A | 23229 | 1939 | Heater room | Same | Same | 120 |
| B-5 | 23228 | 1935 | Gas and oil house | Same | Same | 180 |
| B-6 | 23220 | 1936 | Garage | Equipment shed | Same | 2,000 |
| B-7 | 23227 | 1936 | Residence 1 | Same | Same | 1,400 |
| B-8 | 23226 | 1937 | Residence 2 | Same | Same | 1,500 |
| B-9 | 23224 | 1935 | Comfort station | Same | Same | 650 |
| B-10 | 23222 | 1937 | Ranger dormitory and garage | Quarters and garage | Same | 1,400 |
| B-10A | 23222 | 1940 | Laundry | Same | Same | 180 |
| B-11 | 23223 | 1937 | Residence 3 | Same | Same | 1,200 |
| B-12 | 23225 | 1937 | Storage | Same | Same | 650 |
| B-13 | 23221 | 1937 | Garage | Training room | Same | 1,300 |
| B-14 | 23219 | 1937 | Gas and oil house | Office storage | Same | 400 |
| B-15 | 23218 | 1937 | Dining room, kitchen, and lunchroom | Offices | Same | 2,800 |
| B-16 | 23218 | 1938 | Employee dormitory | Offices | Same | 2,300 |
| B-17 | 23217 | 1939 | Lodge lobby and salesroom | Snack bar and curio shop | Same | 2,000 |
| B-18 | 23216 | 1938 | Operator's residence | Offices | Same | 1,200 |
| B-19 | 23215 | 1939 | Cabin group A | Quarters | Same | 1,000 |
| B-20 | 23283 | 1939 | Cabin group B | Quarters | Same | 1,200 |

| <u>Bldg. no.</u> | <u>LCS no.</u> | <u>Date begun</u> | <u>Original name/use</u> | <u>Current name/use</u> | <u>Proposed name/use</u> | <u>Size**</u> |
|------------------|----------------|-------------------|---|---|--------------------------|---------------|
| B-21 | 23271 | 1939 | "Kiva," comfort station, linen storage, and boiler room | Laundry and storage | Same | 800 |
| B-22 | 23270 | 1939 | Powerhouse | Same | Same | 400 |
| B-23 | 23269 | 1940 | Cabin group D | Offices | Quarters | 800 |
| B-24 | 23249 | 1939 | Cabin group C | Quarters (A and B) Offices (C and D) | Same Quarters | 1,400 |
| B-25 | 23248 | 1939 | Stable and quarters | Stable | Same | 1,800 |
| B-26 | 23247 | 1940 | Checking station | Entrance station | Same | 170 |
| B-27 | 23246 | 1940 | Cabin group E-1 and linen storage | Quarters (A and B) Darkroom (C) Storage (D) | Same Same Same | 1,500 |
| B-28 | 23245 | 1940 | Cabin group E-2 | Quarters | Same | 1,100 |
| B-29 | 23244 | 1940 | Cabin group E-3 | Library (A) Storage (B) | Same Same | 1,100 |
| B-30 | 23243 | 1941 | Fire lookout and quarters | Same | Same | 600 |
| B-31*** | 23242 | 1934 | Entrance road and wall | Same | Same | N/A |
| B-32 | 23241 | 1941 | Residence 4 | Same | Same | 1,600 |

* Planning under way at this time may alter some of these proposed uses.

** Gross square footage.

*** This structure, although a part of the CCC legacy in the park, is outside the scope of this study.

LCS – List of Classified Structures.

N/A – not applicable.

PLANNING DOCUMENTS

Maintenance and operation of these buildings is in accordance with the "Bandelier General Management Plan" (May 1977) and the "Cultural Resource Management Plan" (November 1981).

Because Bandelier is a national historic landmark district, all these historic structures fall within management category A (must be preserved).

PROPOSED TREATMENT

The treatment proposals herein are in the nature of maintenance and preservation, including emergency measures to arrest ongoing and prevent further deterioration. All treatments are consistent with "Management Policies of the National Park Service," chapter V, and NPS-26, release 3. The national historic landmark status of the buildings mandates their preservation.

COOPERATIVE AGREEMENTS

A concession contract is in force between the superintendent of the park and a concessioner to operate a curio shop and snack bar in B-17.

A cooperative fire agreement is in force among the superintendent of the park, several land management agencies, and the city of Los Alamos.

RECOMMENDATIONS FOR CONSERVATION OF PRODUCTS OF THIS STUDY

The oral history tapes will be accessioned into the park collection. The photographs taken for this document and the copies of the historic photos made for this study will be given to the park for inclusion in the park's photo archives. Paint and mortar samples will be accessioned into the park collection.

HISTORY AND SIGNIFICANCE

THE MONUMENT'S EARLY YEARS

Bandelier National Monument came into being on February 11, 1916, under the jurisdiction of the U.S. Forest Service (USFS), U.S. Department of Agriculture, as a part of Santa Fe National Forest. Bandelier was a well-known archeological area and one of a group of southwestern sites for which Representative John Lacey of Iowa and archeologists such as Edgar Hewett and Jesse Nusbaum fought for federal protection.¹ Even as early as 1888, the Bandelier area, under the names of City of Cliffs and later Pajarito National Park, was proposed for national park status. Finally, in 1916, Woodrow Wilson signed the bill setting the area aside as a national monument to protect "certain prehistoric aboriginal ruins . . . of unusual ethnologic, scientific and educational interest."² Included in the monument were a series of cliff dwellings and pueblo ruins in the southern section of the Pajarito Plateau. The green valley of Frijoles Canyon, the most dramatic section of the monument, contained 12th through 16th century archeological features and a permanent stream.

By September 1930, Horace Albright, director of NPS, was expanding and rounding out the national park system. Bandelier was one of a number of areas that he scrutinized for possible inclusion.³ Albright asked archeologist Jesse Nusbaum to assist him and other park experts in studying the feasibility of including Bandelier within the national park system. Albright also wanted to consider expanding Bandelier's boundaries to include other archeological sites of similar importance in the vicinity. Nusbaum, a former superintendent of Mesa Verde National Park, was then director of the Laboratory of Anthropology in Santa Fe and a consulting archeologist to the Park Service. In October 1930, Albright and Nusbaum, accompanied by Roger Toll (Yellowstone superintendent) and M. R. Tillotson (Grand Canyon superintendent), toured the Rio Grande valley, Puye ruins, Santa Clara Pueblo, sections of the Pajarito Plateau, Bandelier, Cochiti Pueblo, Bland, Valle Grande, and Jemez Pueblo to assess the various resources and their suitability to the national park system.⁴

Jesse Nusbaum favored having Puye ruins included in any national park proposal. He noted that visitation at Puye was considerably higher than at Frijoles Canyon in Bandelier. Puye had easier access, and most people could see at least part of the ruins there.⁵ The only access into Frijoles Canyon was down a steep foot trail. One look at the trail turned away many, who peered over the edge of the canyon and decided that the climb was too difficult. Neither the beauty of the canyon nor the small hotel at its base could draw the less hardy visitor. Director Albright felt that Bandelier should remain a national monument and that legislation for including it in the national park system should include a provision for acquiring the more accessible Puye. Albright saw a need to protect the rights of the Indians in the Santa Clara Pueblo as well as a need to give "the Park Service the same opportunity for protection of the ruins and for the handling of the visitors in these areas."⁶ Albright asked Nusbaum, as consulting archeologist to NPS, to proceed cautiously with negotiations with USFS and the local Indian agent. Albright sought a solution acceptable to all parties.⁷

Nusbaum did proceed. USFS agreed to the proposition with one stipulation: that the Park Service work things out with the Santa Clarans. In addition, USFS was willing to trade the best dry-farm lands available in the area, immediately to the west in Jemez National Forest, for Puye. They understood that the people of Santa Clara Pueblo had wanted these lands.⁸

In early February 1932, the Santa Clarans decided not to allow NPS to take over management of Puye. They agreed with the recommendation of Ed Lowrie, a newspaper writer from Washington, D.C., and an acquaintance of Nusbaum. Lowrie was working at the Brookings Institution in Washington, studying law and order in pueblo societies. He boasted to Nusbaum about his success in uniting three opposing factions in the pueblo against the Park Service in this matter.⁹ The Park Service complied with the pueblo's wishes. The matter of Puye's inclusion in the national park system was dropped, to the disappointment of Albright, Nusbaum, and others. They had been hoping to have Puye cliff dwellings as Bandelier's prime visitor attraction. On February 25, 1932, Herbert Hoover signed a proclamation turning Bandelier National Monument over to the Park Service, enlarging it to include nearby Otowi and Tsankawi ruins and excluding it from Santa Fe National Forest.¹⁰

When Bandelier came under Park Service jurisdiction, it became part of the Southwestern Monuments – a group of 14 national monuments and reserves – under the superintendency of Frank "Boss" Pinkley. Boss's headquarters were in Coolidge, Arizona. From there Pinkley traveled extensively, managing his resources and his talented, dedicated personnel with, as he termed it, "microscopic" funding. Among the early management actions he undertook for Bandelier was the appointment of one Park Service employee to run the area. He chose Edgar Rogers, a ranger who had been working in the Southwestern Monuments for several years.

On June 13, 1932, Edgar Rogers, the first custodian of Bandelier, arrived. He and his wife, Gay, moved into the leaky old Forest Service ranger residence – one of a group of buildings in the canyon – and set up a small office. Four days later, he put in his first modest request to the procurement office of the Southwestern Monuments and asked for some simple supplies to run his new monument: two flags, a 70-foot flag rope, stationery, a gum eraser, and paper clips.¹¹ Most of Rogers's time was taken up in guiding tours of the ruins for the visitors who did make it down into the canyon. Rogers was called back to Arkansas about a month later because of his father's death. Gay began leading the tours as a volunteer while her husband was gone. She was such a smash that Director Albright wrote her a congratulatory letter at the end of the summer praising her fine work. Edgar, a troubled soul, wrote to Pinkley later that summer: "From what Gay writes, she makes a better ranger than I. Please excuse the pencil."¹²

Because funding was so meager, Edgar Rogers's appointment as park custodian was only a summertime assignment. Pinkley took Rogers out during the winter and moved him to another Southwestern Monuments area, leaving Bandelier with problems. With the lack of federal presence, 21 Cochiti Indians took the opportunity to set up a hunting camp in Alamo Canyon to hunt deer a few days after Rogers left. George Frey, Rogers's neighbor who ran the hotel in the canyon, contacted Jesse Nusbaum in Santa Fe and apprised him of the situation. Frey and two deputy game wardens ordered the Cochiti out. The Indians complied. Nusbaum brought the matter to Director Albright's attention, and Albright questioned Pinkley about the lack of full-time Park Service staffing. The need for better federal control of the monument was evident. Bandelier was never again left without NPS personnel after that winter.¹³

In a regional context, the need for development of the Southwestern Monuments became so overwhelming that Albright and others planned for more personnel and better facilities to manage and protect the resources and to accommodate the growing numbers of visitors. Because so much would be going on in the Southwest, and Santa Fe was more centrally located, Horace Albright had mentioned to Boss Pinkley the possibility of moving the headquarters for the Southwestern Monuments to Santa Fe. Bandelier and Canyon de Chelly were gearing up for development, and a land situation at Chaco

needed some resolution. Also, the Laboratory of Anthropology was a regional archeological center, and Albright felt that it would be to the advantage of NPS to be closely allied with an organization of such similar interests. Nusbaum had even written to Alfred Kidder to see if the laboratory could give office space to Pinkley. Although Boss chose to remain in Coolidge for the time being, this early movement resulted in the establishment of NPS's Region III headquarters in Santa Fe several years later to serve those needs.¹⁴

Bandelier had been a limited tourist attraction for some time when NPS took control of the area. George and Evelyn Frey arrived in Frijoles Canyon in 1925 and bought their property from Judge Abbott and his wife, who had been living there since 1907. The Freys expanded some of the buildings of the small dude ranch they acquired from the Abbotts and built additional ones. The Freys's first house was near the rito (creek). They later moved up the canyon, closer to the Tyuonyi ruins. Other historic occupation of note included a cabin ruin toward the southeast end of the canyon proper and a circular stone floor to the southeast of Tyuonyi.

The Freys's development consisted of a small lodge for tourists, quarters for the help, six cabins, two bathrooms, a barn and chicken yard, a workshop, a storage room, a garden, and an orchard. Another larger barn, with a loft and an apartment, was built later. The Freys had multiple occupations – running the lodge in the tourist season and raising chickens, ducks, horses, mules, and cattle. They raised the smaller animals in the canyon and ran about 20 head of cattle on South Mesa. They had an extensive orchard and garden, which they irrigated with water from a ditch dug by the Abbotts. The orchard had plum, cherry, nectarine, peach, apple, and pear trees. They raised stock and produce for their lodge and themselves. Because no road into the canyon existed, they brought in supplies, luggage, and linen by a tramway that Mr. Frey constructed. The tram had phones at the top and bottom. When visitors arrived in groups, such as the Harvey Indian Detours (a touring operation allied with the Atchison, Topeka, and Santa Fe Railway), they phoned from the top.¹⁵ The wrangler then rode up, met the group, loaded the luggage on the tram, and brought the tourists down on horseback.¹⁶ The hotel did a reasonable business, and a 1925 tour guide put out by USFS noted the attraction of a "small ranch hotel on the banks of the Rito."¹⁷ By 1929, visitors to the canyon numbered 3,200, despite the difficulty of access.¹⁸

Part of Albright's plan in establishing a Park Service presence in Bandelier to protect the resources and allow better visitor access involved constructing a road into the canyon. Boss Pinkley, NPS Chief Architect Tom Vint, and landscape architect Charles Richey studied development possibilities on a visit to the monument in June 1932.¹⁹ They began discussions and schematic drawings.

After a couple of months at the monument, custodian Rogers wrote to Pinkley:

We like our monument a lot but it is not perfect. The trail from the top of the hill to the floor of the canyon is the one we like the least. From careful inquiry I think I am safe in saying that at least 15% of the visitors do not even attempt the descent after they have driven to the top. While the trail is only five-eighths of a mile long, it is very steep. Then there is a walk of two miles or more up and down the ruins. Of course, there are always a few people who would not walk a small distance to see anything.²⁰

In his typically meek fashion, Rogers only hinted about his monument's need for a road. Verne Chatelain, the chief historian for NPS, also visited the site. He concluded that, although Bandelier might not be the most unusual archeological site in the Southwest, the monument had greater

possibilities for "popular treatment" than any other southwestern area. He wrote to the chief engineer Kittredge that a road into the canyon should be built, and soon.²¹

The general consensus in NPS was that the road was necessary, but the subject of a road into the canyon was a sensitive local issue. NPS Chief Engineer Frank Kittredge sent his assistant Walter Attwell out to review options for the road but asked him to do it quietly, avoiding public contacts and fielding all questions to Pinkley and Nusbaum.²² Custodian Rogers had left for his winter assignment elsewhere in the Southwestern Monuments. In response to a query from Director Albright, undoubtedly prompted by local concern, Kittredge wrote that Attwell was ascertaining "the possibilities of routes of various types and standards and their costs and that he is not making a survey."²³

By October 1932, acting director A.E. Demaray was writing to Jesse Nusbaum asking him to make discreet inquiries on local feelings toward a road into the canyon. Both Boss Pinkley and Verne Chatelain felt that opposition came from a group in Santa Fe.²⁴ Pinkley, who never seemed to lack an opinion on any subject, had written earlier in a letter to Albright:

I am looking for a small group of conservatives . . . to start an insurrection about the time we start that road . . . I have gone over the situation a good many times so I am going to push it ahead I don't see the sense of keeping 15,000 people a year out of that canyon and making the 4,000 people who go there walk down and up that trail, when the road would make things so easy and could be so located as to not be seen from the inside of the canyon at all. I am willing to go pretty far to be artistic and hold things after the old styles, but if those conservatives want to hold things just as they used to be around Santa Fe, they will have to go to business every morning with about 60 pounds of pot metal armor on and ride mules instead of automobiles when they travel. The mud hut nuts are all right and I am for them, but we can't refuse 15,000 visitors admission into a national monument just because the Spanish didn't use automobiles 300 year ago: it just doesn't make sense.²⁵

Nusbaum's formal response to the director's inquiry recommended that NPS hold off on constructing the road until the political climate became more favorable and the park was permanently staffed. He wrote that not only the artists in Santa Fe protested the road, but also others "in all walks of life who have always thought of Frijoles as a sanctuary that should never be entered by automobile highway."²⁶ The *Santa Fe New Mexican*, owned by U.S. Senator Bronson Cutting, also pushed for the canyon to remain relatively pristine.²⁷ Demaray responded that the Park Service had a responsibility to make the canyon accessible to all visitors, and that "the practice of the Bureau of the Budget is to grant increased expenditures for personnel only after the number of visitors is such as to make an increase overwhelmingly necessary. And it is not hard to see that the easiest way to get visitors to Bandelier is by building a good road."²⁸ The Park Service's stance on how Bandelier would be developed was becoming evident: the agency saw the road as absolutely necessary to increase visitation and thereby increase personnel and justify development.

EMERGENCY CONSERVATION WORK PROGRAMS AT BANDELIER

When the Emergency Conservation Work (ECW) Act passed on March 21, 1933, creating what became known as the Civilian Conservation Corps or CCC, Bandelier was one of the few NPS areas with no master plan. Because of its placement under NPS only a year earlier, Bandelier had only minimal direction in its development scheme. Early NPS directors Stephen Mather and Horace Albright had both stressed the importance of park planning, and most park areas were equipped with six-year master plans.²⁹ With the passage of the ECW Act, which provided personnel and some funding, NPS now had the ability to complete long-term projects, the designs of which were sitting on Park Service shelves waiting to be implemented. Areas with existing master plans began work quickly. Bandelier's early projects were done in a more spontaneous fashion: its first six-year plan did not exist until more than one year later.³⁰

The CCC had multiple purposes: to train unskilled men and improve their morale by giving them productive work in national and state forests, parks, and related areas; and to improve the economy by providing work relief. Enrollees signed up through the Department of Labor; were moved, fed, and housed by the Army; and were sent to work for the Departments of the Interior and Agriculture. Robert Fechner, director of the CCC, provided specific guidelines for work that could be done by the CCC. Approved, with certain limitations, were the following types of work:

- construction and repair of structures such as trail and campground shelters, comfort stations, custodian's residences, and other minor facilities that would enhance visitor use

- construction and maintenance of campground facilities (picnic tables, fireplaces, pavilions, and so on)

- construction and maintenance of bridges (connected with the park road system) and trails

- construction and repair of water supply systems and waste disposal facilities

- construction and maintenance of park roads

- construction and maintenance of dams

- construction and maintenance of fire towers and other fire control features³¹

A formidable battery of men oversaw CCC projects in the western national parks. Arno Cammerer, who had replaced Horace Albright as director of NPS, approved all park-related CCC projects after Chief Forester John D. Coffman reviewed them. Frank Kittredge, the chief engineer; Verne Chatelain, the chief historian; and Thomas Vint, the chief architect, kept a close eye on all park developments, deciding among themselves how park facilities could best be built to serve the dual mandate of resource protection and visitor use. Kittredge's and Vint's offices reviewed and signed off on all construction drawings, whether done in their offices, as was frequently the case, or done in the field by engineers and landscape architects.³² District inspectors examined CCC projects and camp conditions usually monthly and reported their findings to Washington. The normal chain of command for park CCC projects consisted of a project supervisor overseeing and coordinating the work of an engineer, a forester, a landscape architect, and various technicians.³³

The development of park structures and facilities was guided by standards of architecture and landscape architecture that had gelled under the direction of Chief Architect Tom Vint. From the earliest days of NPS, architects, landscape architects, and Park Service directors all had definite ideas about the sorts of structures they felt were suitable for national parks. Great landscape architects of the private sector such as James S. Pray of Harvard University, J. Horace McFarland of the American Civic Association, and Frederick Law Olmsted lobbied for appropriate development in national park areas. Their efforts paid off when the Park Service issued its first statement of policy. On May 13, 1918, NPS called for harmonizing all improvements such as roads, trails, and buildings with the landscape. The policy required the "employment of trained engineers who possess either a knowledge of landscape architecture or have a proper appreciation of the aesthetic value of park lands." In addition, the statement required that all improvements be done "in accordance with a pre-conceived plan developed in special reference to the preservation of the landscape."³⁴

Drawing from this first statement of policy, experimentation in building style and site design throughout the 1920s resulted in the formulation of the principles of what is now termed *rustic architecture*. Vint pulled recent graduates and young apprentice architects and landscape architects into the Park Service and schooled them on the job in this type of environmental design.

The basic precept of rustic architecture – or *parkitecture*, as it was sometimes called – was that any structure built in a park should harmonize with its environment. This principle applied to everything: fireplaces, picnic tables, comfort stations, ranger cabins, large visitor centers, and community buildings. The structure harmonized with its natural environment through the use of on-site or locally available materials, such as granite and massive timbers in Yosemite. The structure also related to the surrounding topography through shape and form – by being designed to fit the small promontory on the edge of the Grand Canyon, for example. In addition, the structure reflected local cultural traditions through the use of simple stylistic elements, such as the flat roofs and projecting vigas (peeled log beams) of pueblo revival architecture in the Southwest.

Most often, the structure was designed to be subservient to its environment. Because of the blend of the materials with the setting, the careful incorporation of the building's form with its site, the frequent emphasis on horizontality through the use of battered stone walls, and the use of other natural materials such as exposed wood, buildings merged so well with sites that they often looked as if they had grown out of the landscape rather than having been constructed on it. Careful landscape planning – down to staining rocks to make them appear weathered – contributed greatly to the overall effect. Sometimes buildings emphasized the natural setting, such as at Chiricahua National Monument; other times they more strongly reflected the cultural traditions, such as at Bandelier. Rustic architecture was not a style, even though its practitioners often referred to it as such. Rather, it was a design ethic that incorporated any number of styles from pueblo revival to colonial revival depending on where a structure was built.³⁵

Pinkley sent the first request for an ECW camp at Bandelier to the director a month after the CCC was established. Walter Attwell, the floating engineer out of Kittredge's shop in San Francisco, had written to Boss Pinkley requesting a camp to perform trail construction and fire protection at Bandelier. Attwell believed that Bandelier deserved a camp, especially considering that camps already existed at Great Smoky Mountains, Glacier, Sequoia, and Platte national parks.³⁶ Pinkley wrote to Albright with his request three days later.³⁷ Edgar Rogers, Bandelier's custodian, had similar ideas. He recommended to Pinkley that they get money for an entrance road and other improvements first, then for administration buildings and living quarters, possibly through the National Industrial Recovery Act.³⁸

The request for the CCC camp had gone in during the spring, and by summer there was still no response from Washington. Pinkley wrote to the director again at the end of August, reinforcing his arguments. Pinkley still believed that a sufficient amount of trail work, "highway improvement," forest cleanup, and other work existed at Bandelier to justify a camp. He realized that the best time for construction was passing quickly and wrote: "I myself would much prefer to have the camp work there in the summer, but if it is a case of take a camp in winter or not get it at all, I believe we can make it efficient enough to make the attempt worthwhile."³⁹ A week later the approval came through with a request that Walter Attwell be made engineer in charge.⁴⁰ Associate Director Demaray wrote to Pinkley that the approval of the winter camp at Bandelier was not a problem, especially because camps at higher elevations had also been approved.⁴¹

With the camp approved, the wheels of bureaucracy ground into action. Pinkley recommended that the army first construct a service road into the canyon so that supplies, materials, and men could be brought into the monument more efficiently than by the old trail and tramway.⁴² NPS still needed to acquire a right-of-way easement over the Ramon Vigil grant (USFS land) to build the service road.⁴³ The army was scheduled to begin construction of the camp on October 1, and forestry work was due to start on October 15, 1933.⁴⁴ Custodian Rogers became anxious about the size of the project and wrote to Pinkley that he saw the winter camp as a mistake. He noted that the camp needed an enormous amount of wood to heat the temporary buildings. He reminded Pinkley that under CCC regulations only small truck trails necessary for protection could be built and that the entrance road was not yet approved. He fretted that he was not even certain what the CCC would do when it arrived so late in the year.⁴⁵ His letter clearly showed how overwhelmed he felt. A week later he complained to Pinkley that the excavation and fill for the CCC barracks was leaving a scar that would be hard to eliminate once the camp was gone.⁴⁶

Apparently Edgar Rogers's vision was not as broad as that of Pinkley and others. He did not understand that the unspoken idea was to build the road as a truck trail. This approach temporarily circumvented the required approval for an entrance road, and the increased visitation resulting from the new truck trail into the canyon would mandate subsequent development. Pinkley and others had gambled on that road. If it were built properly, leaving minimal scars, the road would provide such fine access and serve such a great purpose in putting men to work that the political opposition from Santa Fe could be placated.

Rogers was at a loss about how to manage the onslaught of the CCC and the army. His anxiety over the enormity of the situation culminated in his taking his own life in the middle of October 1933.⁴⁷ Boss telegraphed his family in Arkansas: "Seemed advisable bury Ed at Santa Fe this morning stop Committed suicide stop Apparently despondent over unfamiliar work stop No other reason discovered stop Letter follows stop Park Service extends fullest sympathy stop."⁴⁸

After that hard blow of losing one of his people, Pinkley acted quickly. He moved his procurement officer from Coolidge into the position of acting custodian. Martin O. Evenstad arrived toward the end of October 1933 and took over the task of running the monument and mobilizing the CCC.⁴⁹

Evenstad set up a general office and a drafting room for engineer Attwell and landscape architect Lyle Bennett in cabins 1 and 6 of the old lodge.⁵⁰ The army moved in and had 30 men construct the temporary CCC camp buildings and build a waterline to supply the camp. The army officers, who had been staying in the old lodge cabins, moved into the new temporary buildings, and the CCC began moving in about November 5-7, 1933.⁵¹

Early projects for the CCC that winter included eradicating tent caterpillars from the canyon, installing and repairing a phone line, constructing a 12-foot-wide truck trail into the canyon, renovating the old ranger cabin, constructing trails and drift fences, fencing the detached area, removing barns and other buildings in the canyon, and repairing the ruins.⁵² From December through April, men from the Civil Works Authority (CWA) also worked in the monument. Under CWA funding, they widened the 12-foot CCC truck trail to 22 feet.

The first car drove into the canyon on December 9, 1933. As Acting Custodian Evenstad recorded, the honor of riding down in that first car "was reserved for Engineer Attwell, and Mrs. Frey, who runs the Frijoles Canyon Ranch hotel, and who said she had waited for this ride for nine years. Although the road as yet is only passable, most of us chose the road in preference to the 'long, long trail.'"⁵³ Boss Pinkley now had his entrance road completed and a 200-man camp ready to continue work. His scheme was falling into place.

THE CCC CAMP

The CCC men moved into their new camp during a snowstorm on November 5 and 6, 1933, coming from their former camp in Santa Fe National Forest.⁵⁴ Captain Rubbell commanded them and Lieutenant Roberts served as executive officer.⁵⁵ The army built the camp to the southeast of the Tyuonyi ruins, in "an open sunny location on the north side of Frijoles Canyon, which had formerly been cultivated . . . to take advantage of the short periods in the winter during which the sun would shine into the canyon." The men brought the materials for constructing the camp buildings into the canyon on the cable tram and the foot trail. The army hauled in 180,000 board feet of lumber, cement, roofing, and other materials to construct the buildings.

The army constructed symmetrical, wood frame structures of typical army common-sense design. In standard CCC camp fashion, the army designed the simple buildings to be easily erected and easily removed. The gable roofs shed rain and snow. The barracks to house the enrollees consisted of two "large U-shaped buildings [figure 2], each long wing having a double row of beds accommodating fifty men and the short connection at one end served as shower and wash room." In addition to the barracks, the camp included a mess hall with a kitchen, an infirmary, quarters for officers, quartermaster's storage, a large recreational building, and a three-pit latrine.⁵⁶ The CCC foremen camped in tents "on top of the hill" until the truck trail and a few other projects were completed.⁵⁷

The work varied tremendously, most of it involving construction and landscape work. The first projects included fencing, trail work, road construction, and forestry work. Enrollees quarried rock, built trails, mixed mortar, constructed buildings, poured concrete, laid roofs, adzed timbers, and did both rough and finish carpentry. They cut trees, moved rocks, and moved earth. They sprayed the trees in the canyon for tent caterpillars and pine beetles. These "unskilled" laborers received guidance, direction, and on-the-job training from "locally experienced men" (or LEMS, as they were called).⁵⁸ One CCC enrollee per enrollment period was assigned as clerk or assistant clerk to help with the administrative end of running the CCC in the monument. Other enrollees became guides who escorted visitors around the ruins.⁵⁹

Life in the CCC camp revolved around hard work, but the army also set up educational and training courses to fill the enrollees' off-duty hours. Part of the thrust of the CCC, after all, was to improve character. The army approached that task through training. Because the camp was new, the first enrollment period's offerings were slim, but the situation improved quickly.

The first educational program, during the fall of 1933, consisted of teaching the men about the archeological importance of the area and instructing them on the regulations concerning the care of archeological features to deter potential pothunting.⁶⁰ One year later, the camp offered courses in Spanish, spelling, accounting, history, English, surveying, architectural drawing, commercial law, first aid, and current events. Jared Morse, the NPS resident landscape architect at the time, assisted with the architectural drawing class, and the camp surgeon taught first aid. That year, the young men also had a camp library.⁶¹ By 1935, approximately 90 percent of the CCC enrollees took part in the educational activities offered. To accommodate the enriching activities, the army even designated separate rooms for study, reading, and classroom work.⁶² By 1936, anthropology was a popular class, and the forestry foreman taught a course in general forestry and botany, specializing in local vegetation.⁶³ As the CCC neared completion of its work at Bandelier and as the company's move out of the canyon seemed imminent, the educational programs ended.⁶⁴

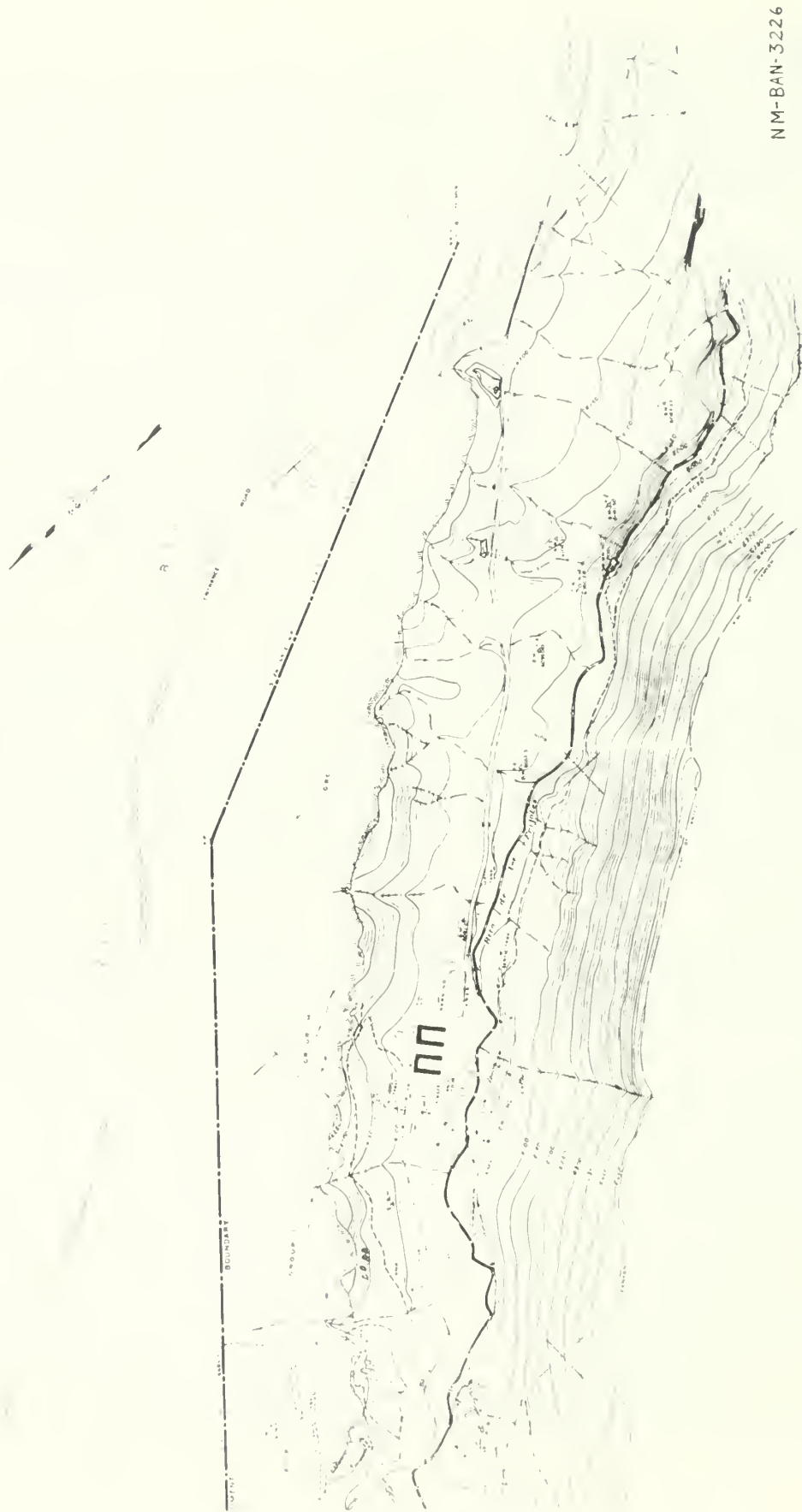


Figure 2. The CCC camp, identified by the two large U-shaped barracks, sat at the end of the truck trail into Frijoles Canyon. By the late 1930s much of the camp had to be moved as the corps constructed the monument's stone buildings. (Drawing no. 315/3226, sheet 1).

Little record has been found of the recreational activities that took place during the first winter the camp existed. However, by the spring of 1934, landscape architect Lyle Bennett had approved the use of the formerly "cultivated area between the Great Kiva (council room) and the river just below the barns and sheds belonging to Mr. Frey for a ball diamond." With limited space available for recreation, he felt that the use of that area would do the least damage to archeological features, and he vowed that baseball games would cease should damage occur to the resources.⁶⁵ The CCC boys leveled the old field with a grader drawn by a tractor and hardened the surface with repeated waterings. Throughout the CCC's tenure at Bandelier, the enrollees challenged nearby camps in baseball. They also built two tennis courts "on the camp grounds" – one clay and one asphalt – and some horseshoe courts.

Another popular sport was boxing. As the custodian reported:

Some of the CCC boys, who have pugilistic leanings, have arranged for an evening of boxing bouts with men from other CCC camps in the area, to be held in Santa Fe. . . . There are five bouts scheduled, each of which will have a participant from the Bandelier camp. They are to be opposed by picked men from several of the other camps according to the divisions of weight available. This camp seems to run a rather high percentage of men skilled in the manly art.⁶⁶

The men usually enrolled for a period of 18 months or two years.⁶⁷ Some already in training came from other camps, while others came with no skills. The Bandelier camp usually had 200 CCC men; 250 men was the highest enrollment and 180 the lowest.⁶⁸

The winter of 1933 was rough on morale of all involved – the army personnel, the CCC enrollees, and the new monument staff. The first problem arose when the enrollees complained en masse to NPS engineer Walter Attwell that the camp's food left much to be desired and that the meager portions they received were not sufficient for men doing such hard labor. For breakfast, they complained, they received only two hotcakes and a cup of coffee, with no refills on either. Two days later, the army's commanding officer held a meeting, lecturing the men on caring for their quarters and ending by saying, "Forget the grub complaint and I will bring in 20 cases of beer and a hundred women." The commanding officer had already scheduled a dance before the incident, unknown to the enrollees, who felt they were receiving a good deal. Government trucks hauled in the beer and the women. One enrollee was discovered in the barracks in an extremely compromising position with a young woman. This was obviously inappropriate behavior, not to be condoned by the army. The commanding officer was replaced shortly thereafter, and the enrollee was dismissed from the CCC.⁶⁹

The problems did not end there, however. Two enrollees who had signed a petition to the commanding officer complaining about the living conditions in the barracks were brought up for trial by the army. On the eve of the trial, the commander received a telegram, later found to be bogus, asking for the discharge of the two enrollees so that they could accept jobs at Tumacacori National Monument. Assured that the two men would be leaving, the commanding officer discharged them. Rather than leaving for Arizona, the two men, as well as a third who received a "highly recommended" rating on his discharge, were hired immediately as foremen by NPS custodian Evenstad and CCC camp foreman McGill. The army officers were infuriated. Walter Attwell took it upon himself to fire the three former

enrollees, based on the fact that they were hired in violation of the law. Camp morale improved after these personnel actions were completed.⁷⁰

Despite the problems, in late 1933 and early 1934, NPS engineer Walter Attwell summarized the enormous physical impact the CCC had on the monument:

The camp has been in operation about 7 weeks with the Thanksgiving and Christmas-New Year vacations. Snow has covered the ground three times. Yesterday the thermometer registered zero. Regardless of these adverse conditions, we have a) erected our construction buildings as shops, garages, quarters; b) constructed our camp; c) cleared two miles of the entrance road right of way; d) grubbed and burned all stumps and roots on above; e) drilled and blasted most of roadwork on the first two miles; f) graded two miles of road; g) purchased and placed all culverts and pipe for drainage; h) maintained the entrance road for 10 miles to the monument; i) worked on the trail to Rio Grande; j) worked 30 man crew on trail up canyon; k) excavated and laid 1-1½ mile of 2" water line . . . Harmony is now restored between the Army and the Park Service Technical Men. The camp may now be inspected without disgrace or shame.⁷¹

Attwell's report to Boss Pinkley was somewhat premature in its optimism, for it was another six months before the operation ran smoothly. In March 1934, Attwell had more complaints flying: that the NPS custodian was obstructing work by not procuring materials properly, that he had a stubborn and uncooperative attitude, and that he was making no effort to greet visitors. This time Boss Pinkley sent Hugh Miller, his right-hand man from Coolidge, to investigate and make recommendations. Miller, a thoughtful and even-tempered man, concluded that most of the problems at the monument boiled down to the custodian's lack of tact. The strict monthly allotments for CCC projects severely limited the quality and amount of materials that could be procured, while the administrative demands of running the monument and the CCC projects made it impossible for Evenstad to spend any time with visitors. Miller recommended that Evenstad's responsibilities be divided into two positions: custodian and procurement officer.⁷²

The final problem plaguing the staff occurred between engineer Attwell and landscape architects Chuck Richey and Lyle Bennett: the construction of the road. Like engineers and landscape architects today, they could not agree on where or how to build it. Attwell had wanted to carve the road further into the cliff as it descended into the canyon than the landscape architects did. He felt that the grade would be easier. The landscape architects insisted that Attwell's solution would be too visible from the canyon and the trails. Reports and picky accusations on both sides eventually ended up on the director's desk in Washington. Boss Pinkley stepped in and admonished them to get along, and Tom Vint clarified their responsibilities: the engineer was in charge of carrying out the work indicated on the plans and specifications drawn up by the architects and landscape architects in the Branch of Plans and Design.⁷³

By June 1934, the rough start evened out. CCC camp foreman McGill left for a permanent job.⁷⁴ Hub Chase, who had worked on CCC projects at White Sands, replaced him and did an exemplary job in years to follow. Pinkley moved archeologist Earl Jackson in as the new custodian, leaving Martin

Evenstad as procurement officer under him.⁷⁵ Lyle Bennett, whose duties as resident landscape architect had been divided between Mesa Verde and Bandelier, was transferred to Mesa Verde⁷⁶ and was replaced by Jared Morse, a designer for the Denver City Planning Commission and a "man with considerable National Park experience."⁷⁷ This group of relatively experienced men proved a more compatible cast of characters than the first. Keeping 200 or more men busy developing a park within the strict design parameters set down by Vint's office, the small budget allotments of NPS and the CCC, and the short deadline on projects required compatibility. Despite fairly constant changes in army personnel, the core of the organization was established. The hard physical labor was only beginning, but the work force from the top to the bottom was ready to take on the task.

CONSTRUCTION

In 1932, discussion of a road into Frijoles Canyon had turned into heated argument. That same year Charles Richey, a junior landscape architect from the Branch of Plans and Design (Vint's office) visited the monument. He returned to San Francisco and made a series of recommendations to his boss, Tom Vint. Richey saw an urgent need for an administrative office and a decent ranger residence. He wanted the first unit of the administration building patterned after the one at Casa Grande, and he listed other details for the custodian's residence. He concluded that "the character of these buildings [was] to be the Santa Fe style of architecture."⁷⁸ Santa Fe style, now called pueblo revival or Spanish pueblo style, was the term used by its practitioners before World War II. The terms will be used here interchangeably.

Pinkley, Vint, and Richey had spent considerable time on the site, discussing Bandelier's development. In June 1932 they had picked a tentative location for an administrative area.⁷⁹ Pinkley's idea was that the road into the canyon would end in a parking area, where visitors would be met by a ranger who could conveniently step out of his office and direct them to the campground, hotel, or ruins. This site, chosen earlier by Pinkley, Vint, and Richey, was to be the nucleus of subsequent development. Richey saw the parking lot as a traditional central plaza around which "this entire layout is designed to be carried out in typical Santa Fe style in every detail. . . . The site was chosen . . . so that the buildings would be practically out of sight from the ruins area."⁸⁰

The adoption of that style fit the locale perfectly, both in choice of material and in cultural tradition. Stone was an abundant building material, as was adobe. Following the restoration of the Palace of the Governors in Santa Fe from territorial style to pueblo revival style, more than 90 percent of remodeled houses and more than 50 percent of new houses constructed in Santa Fe between 1912 and 1917 were done in pueblo revival style. During the 1920s and early 1930s a group called the Committee for the Preservation and Restoration of New Mexico Mission Churches set about reroofing and preserving the churches at Laguna, Acoma, Zia, Santa Ana, Trampas, and Chimayo, and built new churches in the Santa Fe style at McCarty's and Abiquiu. In the late 1920s, John Gaw Meem and M.E.J. Colter designed an addition to La Fonda, a large Fred Harvey Company hotel in Santa Fe. In 1930, Meem was busy with the construction of buildings for the Laboratory of Anthropology,⁸¹ whose connection with NPS was discussed earlier. The Santa Fe style was the overwhelming choice for progressive new construction in New Mexico during the 1920s and 1930s.

This flurry of activity in the private sector provided a fertile ground of ideas from which NPS architects could easily draw. With some experience in designing structures for southwestern climates, based on Vint's principles of rustic building design, the architects and landscape architects set to work to create a unified development for Bandelier.

Begun in the fall of 1933, the road was the first major construction project completed with CCC and CWA labor and funding. By January 1934, the enrollees finished the roadbed. A rock retaining wall supported a portion of the roadbed by filling in the end of an arroyo. The retaining wall was 225 feet long, up to 30 feet high (figure 3) and constructed of hard andesite rock, hauled to the site from a quarry 8 miles away.⁸² The guardrail along the road's edge was built in two sections – in late spring

of 1934 and in 1935-36. The first section (220 feet long) was constructed of the same andesite as the retaining wall. The remaining portion (1935-36) (figure 4) was constructed later so that the retaining wall, also of andesite, could settle.⁸³ Figure 5 shows how the building complex evolved from 1934 to 1965. The footing of the extension was 4 feet wide and 18-30 inches deep below grade. The guardrail was designed to complement the strong architectural sense that would become evident throughout the monument's building program. In the guardrail, "large stones, some five feet in length and two feet high combined with small material and short horizontal joints . . . [added] . . . to the architectural appearance of the stone masonry."⁸⁴ The road was oiled in 1938⁸⁵ and coated with RC-3 liquid asphalt in the summer of 1940.⁸⁶ Where blasting into the cliff face had been necessary, the rocks were stained with a solution of iron sulfate to tone down the whiteness and make the exposed rock look more weathered.⁸⁷

The completion of the road had two major effects: Materials could be brought into the canyon with considerable ease, and more visitors could get into the canyon to see the ruins. The local protests over the construction of the road ceased. The *Santa Fe New Mexican*, which had run cartoons about the road showing a hot dog stand in Ceremonial Cave and gas pumps in Communal House ruins, even printed an editorial apologizing for its protests and lauding the Park Service on its sensitive work.⁸⁸

The first permanent building constructed by the CCC was the comfort station (B-1) in the canyon campground (now the picnic area). This building, completed in 1934, was partially banked into the hillside and was a simple stone structure with battered walls, a flat roof surrounded by a parapet and drained by canales (horizontal roof drain spouts that project from the base of the parapet), with vigas projecting from the exterior walls, and latias (saplings or wood slats laid between the vigas) for ceilings. The building had other typical elements of the pueblo revival style: an interplay of masses and voids so that the structure, in plan, was a series of connecting rectangles rather than a simple rectangle; heavy timber lintels over window and door openings; a sheltering baffle at one of the entrances that enveloped the visitor in the building's space; and sawn grilles over the window openings. The building housed the comfort station and showers for the campers. Although it was relatively simple in design, its elements of style set the tone for subsequent buildings.

With battered stone walls supporting the structural vigas of the roof systems, the Bandelier buildings were simple in a structural sense. Although the comfort station had simple elements of design, other buildings where visitors spent more time were extremely decorative. Spanish colonial light fixtures and furnishings were designed for each structure. The great care exercised on the interior design carried through even to the choice of curtain rods. Exteriors exhibited the same concern for detail. Small gardens and walkways, landscaped with native plants and paved with flagstone, provided a suitable environment for the development. Portals and courtyards also contributed to this sense of place.

One valuable trick that the designers and managers learned early was to break the total development into individual components and fund each separately. The ECW program had a \$1,500 limitation on the cost of building materials.⁸⁹ Only the NPS director in Washington could override that limitation. Also, most projects were programmed and scheduled for completion during one enrollment period – six months. Both the \$1,500 regulation and the six-month enrollment period limited the size of buildings that could be built. But these stipulations served only as minor bureaucratic hurdles to Boss

Pinkley, Tom Vint, and their crews. The designers circumvented these limitations by constructing in a modular way: they designed so that the crews built the important buildings first, followed by those of lower priority. By working in this manner they could complete the main buildings in the development first in case funding was cut off at any time.

The \$1,500 limitation also necessitated the use of on-site or locally available materials. Stone, timber, gravel, sand, and clay were all readily available around Bandelier. Because separate accounts covered CCC labor costs, expenditures for acquiring these indigenous materials kept building costs low. Only the charge of transporting the materials to the building site – without the attendant labor costs – appeared on the books. The use of these native materials meshed perfectly with the Park Service ideals of rustic architecture.

In an effort to keep costs down in the administrative area, the landscape architects decided to start with three buildings – an office and checking station, a museum (both now B-2), and a comfort station (B-9). Portals connected the office to both the museum and the comfort station. The office and museum were close enough that the monument staff could work in the office and open the museum when visitation warranted. The buildings also had the benefit of separate heating systems. During the winter months, the museum could be closed entirely. The comfort station was only a few steps away – convenient for visitors coming to see the ruins.

With the increased CCC construction activity and the ever-increasing demands of visitation, the need for maintenance buildings was pressing. Boss Pinkley, Associate Director Hillory Tolson, and Chief Architect Tom Vint agreed on the exact location of the maintenance yard when they met at the park in April 1935.⁹⁰ The Branch of Plans and Design drew the plans by May and received the director's approval by July. The warehouse (B-3) and the gas and oil house (B-5) were constructed following the excavations required for their footings. The maintenance yard was constructed in the canyon, close to the entrance road, with a stone wall around it built "to such a height to screen the contents of the utility yard from the public's eye. Each section of the wall adjoining a building is tied into building masonry."⁹¹ The buildings were constructed for use by the CCC, with the understanding that the permanent structures would be turned over to the Park Service when the CCC finished its work at the monument.

NPS Chief Engineer Frank Kittredge objected to the location of the maintenance yard and let Boss Pinkley know that he was "shocked." He wrote to Pinkley that the entire development was too formal and too oppressive, particularly when imposed on such a beautiful natural area. He said he found himself asking "Where is [sic] the moat and drawbridge?" Despite Kittredge's complaints, Pinkley remained pleased with the development.⁹²

The residential area was next on the agenda. The small park staff had been living in the old ranger residence, left over from the Forest Service, and in rehabilitated structures of the Freys's old lodge. The site for the residential area sat to the southeast of the maintenance yard, parallel to the entrance road. Constructed above the entrance road, the new residences had the advantages of existing topography and additional vegetative screening to hide them from visitors' view.

Three small residences (B-7, B-8, and B-11) and a dormitory-garage (B-10) were built in 1936 and 1937. Because town (Santa Fe) was 40 miles away and employees needed places to store food, they had root cellars constructed in the hillside behind each residence. Each root cellar, of course, constituted a separate project. Because wood was one of the heat sources for the residences, wood storage became a problem in the winter. By 1940, each residence also had a woodshed, complete with stone walls and a roof, to alleviate that storage problem. The woodsheds were also separate construction projects.

With the main portions of the headquarters, maintenance, and utility areas well under way, the park staff and Mrs. Frey began discussing the possibility of moving the hotel closer to the main parking plaza.⁹³ Mrs. Frey believed that the lodge would do better business near the plaza and that cooperation between her lodge and the Park Service would improve.⁹⁴ In addition, Boss Pinkley felt that placing the lodge near the administrative core would allow the Park Service to have stricter management over access to the archeological sites. With the lodge and the monument offices in the same location, visitors could no longer bypass the checking station and head up the canyon.⁹⁵ The assistant director of NPS agreed that a new lodge could be built as an ECW project as long as it met certain stipulations. First, the lodge would be federal property, and at no time would the concessioner have any equity in it. NPS would lease the new lodge to Mrs. Frey. Finally, the CCC would demolish her old structures and landscape the site.⁹⁶ In this way, NPS could concentrate all of the monument's development in one area.

The CCC-constructed concessions operation was developed between 1937 and 1940. Sixteen buildings were built – cabins for guests (B-19, B-20, B-23, B-24, B-27, B-28, and B-29); a dining room and kitchen (B-15); a hotel lobby and curio shop (B-17); an employee dormitory (B-16); a garage (B-13) and small service station (B-14); a combined hot-water plant, linen storage room, and comfort station known as the "kiva" because of its round plan (B-21); a riding stable (B-25); a laundry room (B-10); and new quarters for Mrs. Frey (B-18). The hotel lobby and dining room, as well as the garage and service station, fronted the plaza, as did the NPS museum, office, and comfort station. Behind those buildings sat the cabin units of Frijoles Canyon Lodge in a very carefully landscaped courtyard complete with flagstone walkways and small stone retaining walls that articulated the changes in topography. In a memo requesting a carpenter foreman position, Acting Superintendent Hugh Miller justified his request by saying that the highest standards of construction had been achieved at Bandelier so far, and he expected "to make the hotel units conform in design and construction to highest commercial standards."⁹⁷ The concessions development met that standard.

The CCC constructed four additional buildings to complete the development. A powerhouse (B-22) was added to the maintenance area in 1939. To control visitors better, a checking (entrance) station (B-26) was constructed on USFS land (Ramon Vigil grant).

The CCC finished the last buildings in 1941. A fire lookout (B-30), which had been a high priority early in the CCC program, finally took shape on Forest Service land on the edge of Frijoles Canyon in cooperation with the Forest Service. The custodian's residence (B-32) was built when staffing reached a point where existing housing was inadequate. The CCC finished its building construction work at Bandelier in 1941.

Figure 3. By the mid-1930s the controversial entrance road was completed. The retaining wall supporting a portion of the roadbed was 225 feet long and up to 30 feet high. (Photo circa 1935: Bandelier)



Figure 4. The guardrail along the road's edge complemented the strong architectural sense evident in the monument's building program. The guardrail, in an understated manner, was the stone thread that the visitor followed down the entrance road into the canyon development. The guardrail was constructed in two increments – in spring of 1934 and in 1935-36. (Photo circa 1935: Bandelier)

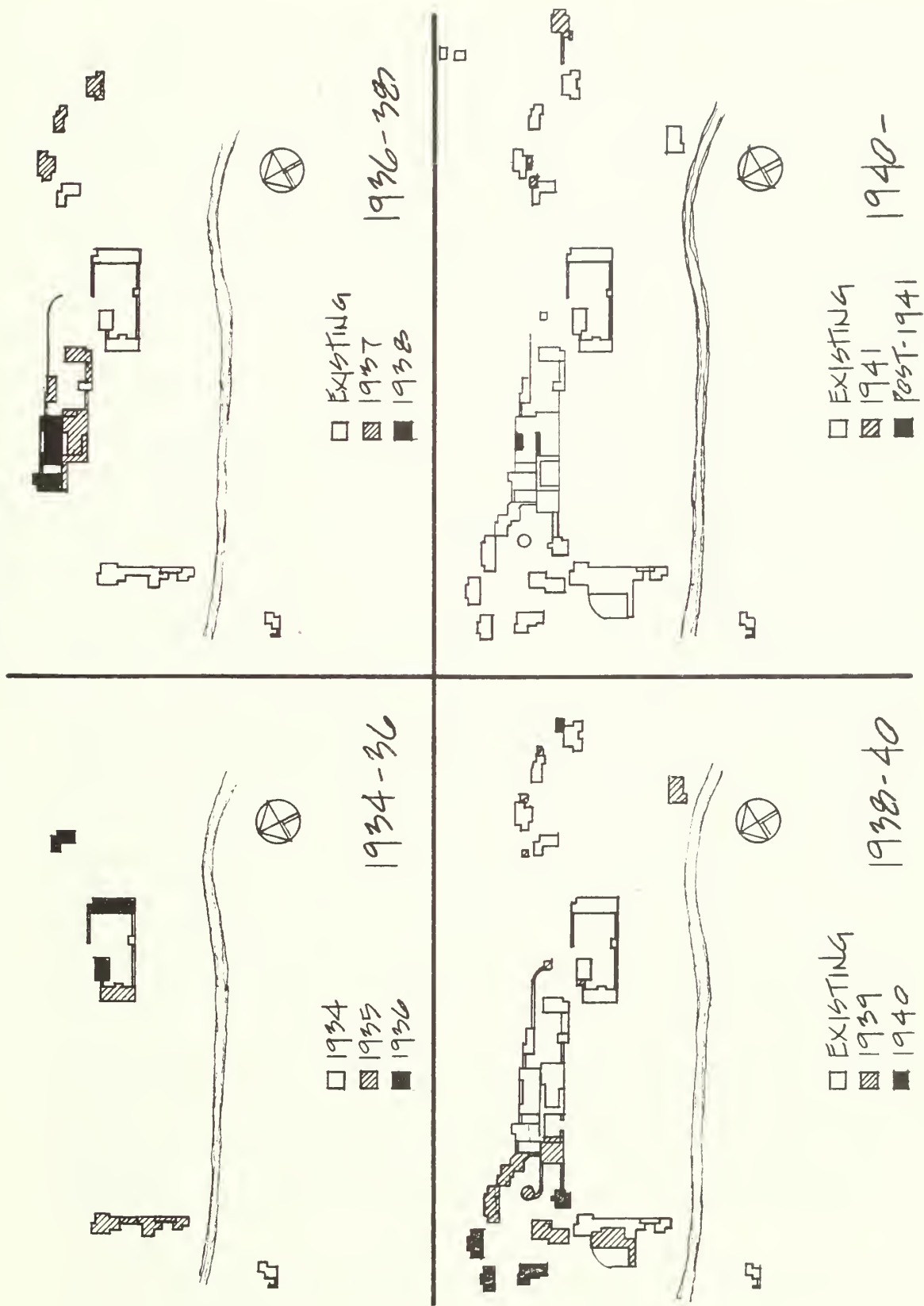


Figure 5. The evolution of the Bandelier building complex from B-1's construction in 1934 to post-CCC activity as recently as 1965.

WINDING DOWN THE CCC

Bandelier had been under a constant threat of losing its CCC camp since 1935.⁹⁸ Justifications and proposals for park projects that would guarantee the camp's life went to Washington every six months, and updates or additional projects went in for consideration and approval practically monthly. The ground in Frijoles Canyon that had been designated as the development zone and leveled and graded was rapidly being filled with buildings. Where there was no building, a shallow hole in the ground awaited one. This problem of space was exacerbated by the army's feeling that NPS development was interfering with the development of the CCC camp. For some reason the army temporarily refused to acknowledge that the CCC's tenure at Bandelier was limited, and the Park Service development was permanent.

The trouble started in 1935 when a portion of a CCC barracks had to be moved so the museum could be constructed. The army complied but requested that definite boundaries be drawn for army and NPS development so that such problems could be avoided in the future.⁹⁹ One NPS landscape architect noted that the buildings had to be constructed so close to each other because there was no other suitable level ground in that immediate vicinity for the agencies to spread out. He also noted that if the Park Service stopped development to accommodate the army, the reason for the camp's location at Bandelier would also end.¹⁰⁰

The situation remained at a crowded standstill for four years while construction continued down-canyon (south) from the CCC camp – in the residential area and the maintenance yard. In 1939, Bandelier's development had reached a point where barracks 2 and the CCC infirmary were in the way of the expanding lodge.¹⁰¹ Building in the canyon had reached the limit where all available space was occupied, and something had to give (figure 6). The regional director in Santa Fe requested that the camp be moved to Forest Service land so that the proposed development at the monument could be completed.¹⁰² Despite its protests four years earlier, the army totally supported the move.

Washington also approved the change. The army, the Forest Service, and the Park Service chose the new location: in Water Canyon, 9-1/2 miles by road from Frijoles Canyon. Hub Chase, the project superintendent, retained his project office as well as a garage and truck storage area in Frijoles Canyon. The monument staff scheduled a final cleanup of Frijoles Canyon. The CCC tried to complete it by the October 1939 meeting of the national park superintendents and the American Planning and Civic Association, but was unable to finish.¹⁰³

The cleanup of the old camp continued through February 1940. Although the CCC buildings were gone, the leveling required for the camp construction took considerable time to naturalize. The high standards of Park Service landscape architects required that the camp area look natural and untouched. In addition to the cleanup, construction of Park Service buildings remained at a fever pitch. The CCC men remained busy. A short report by the project superintendent gave a glimpse of what it was like in February 1940:

Our project situation at present time: Fulton landscaping and hell of lot to complete in and around old camp site, we estimate he can easily keep 30 to 35 man crew busy until June.

Lamborn building entrance road gutter with about 10 to 12 weeks ahead of him. Cano at checking station which should be finished about April 1 to plaster and cabinet work point. Eden starting the laundry house and keeping flagstone floor job going in Museum Lobby (next week to pinch hit in rock quarry during absence of Project Assistant). Cano to pick up the laundry building when finished with checking station (about March 15 in Museum Lobby and continue to checking station.) Grubb has completed all furniture required for furnishing the 14 hotel guest rooms, now has carved book-cases, counter, some doors and railings, together with uncarved doors and screens to construct and place in Museum Lobby; doors, cabin work and all openings to hang in checking station and laundry house; fire boxes to construct; Canyon de Chelly signs to construct and Capulin signs to complete. All of this looks like two good solid months work together with carpenter frame work around the buildings. I believe he will be occupied until May 15, a possible chance he can crowd in a very small amount of furniture for one of the lobbies. It is planned to construct the telephone line to checking station under a project assistant supervision starting in April. After Cano completes the laundry room he then to complete as much as possible of one unit Cabin E.¹⁰⁴

The Park Service had planned to turn the CCC camp (at its new location) over to the Forest Service by June 1940. But then the monument custodian notified the Forest Service that he wanted to keep the camp a bit longer to build a fire lookout and to use the CCC men for fire protection during the fire season.¹⁰⁵ Not only did the enrollees build the fire lookout, but they also managed to build a custodian's residence.

The CCC's final year was hectic. Because the army had used too many enrollees for its own projects, the manpower available to NPS was depleted and NPS work schedules were slowed down, forcing the Park Service to carry projects over into additional enrollment periods.¹⁰⁶ Nature did not cooperate either. Mud and snow made the approach road to the monument nearly impassable in January 1941, threatening to cut off the CCC camp from those last projects in Frijoles Canyon. Bringing in materials was also difficult. The monument's only ranger was busy that month running a six-man crew "cleaning, painting, calsomining, and repairing the hotel and monument buildings" while the CCC project superintendent and a worker hauled firewood to the buildings to keep the rooms warm enough for the paint to dry.¹⁰⁷

For a while during May 1941, a heavy melt and spring runoff from that harsh winter caused flooding that pulled the CCC men off the Bandelier projects completely. They were called in to do "emergency work on the levees to save the town of Espanola."¹⁰⁸ The custodian received word from Washington that the absolute termination date for the CCC camp was June 26, 1941, and a mad rush ensued to complete the south boundary fence, the custodian's residence, the additions to the other residences, the sewage disposal system, and other minor projects.¹⁰⁹ At the end of June, the custodian was able to conclude that, despite the confusion, "Bandelier now ranks as a well-developed monument."¹¹⁰

The CCC had finished its work at Bandelier, and the camp was turned over to the Forest Service. Most of the enrollees stayed with the camp, except for some of the stone masonry and carpentry crews, who transferred to Chaco Canyon. In the last inspection report, the camp inspector noted that "morale,

organization, application, progress and accomplishments" were all excellent, and that the camp was "completed and terminated in the same manner in which it has been prosecuted efficiently and productively."¹¹¹ The CCC had been so closely linked with the Park Service that the general impression of people in Taos, Santa Fe, and Albuquerque was that "Bandelier had been discontinued and turned back to the Forest Service."¹¹² The custodian quickly dispelled that rumor.

The CCC men left behind a monument to their hard labor – a permanent development executed to the highest standards of craftsmanship and design. The camp inspectors had continually noted the high quality of work produced by the Bandelier CCC over the years.¹¹³ The inspectors believed that high quality was in part due to the enthusiasm displayed by the project superintendent and his foremen, who would roll up their sleeves, "don overalls and perform both skilled and unskilled labor along with the enrollees."¹¹⁴ Hugh Miller, Boss Pinkley's assistant, also brought back glowing reports to Coolidge – that the camp ran more like a smooth contract job than a CCC project, that construction standards were constantly improving, and that "the results are satisfactory beyond our most optimistic expectations."¹¹⁵ The results were so successful that the possibility of undertaking a similar venture at Chiricahua National Monument in Arizona became concrete in the minds of former skeptics in the Department of the Interior in Washington. But Bandelier was destined not to be repeated on such a grand scale.¹¹⁶ The world was changing, and in a matter of months the United States would be at war and the CCC would no longer exist.

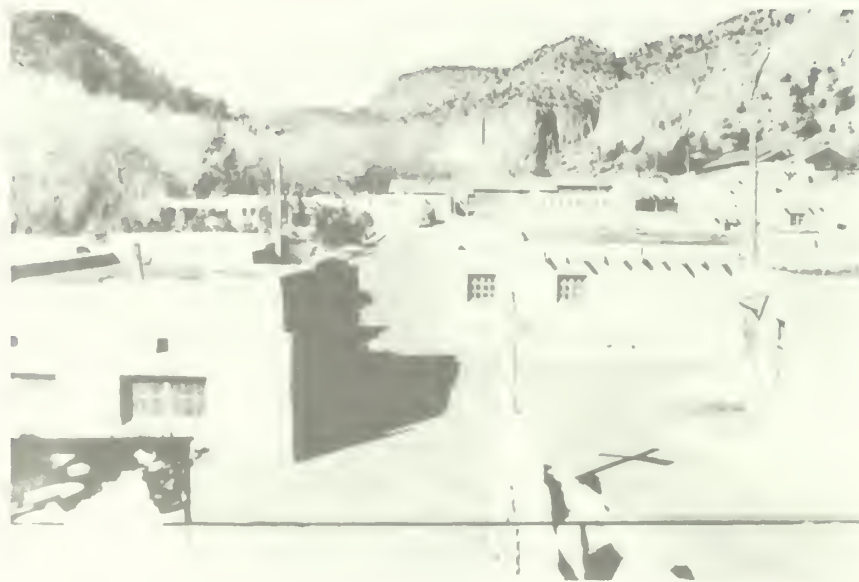


Figure 6. View from the maintenance yard (circa 1939) showing the crowded conditions looking toward the lodge development (right) and the museum (center). The CCC barracks with their metal-covered gable roofs are visible in the center right. Architectural elements such as the protruding viga ends and the recessed windows created strong shadows that contributed to the architectural character of the group. (Photo: Bandelier)

THE WAR, THE ARMY, AND "THOSE ATOMIC PEOPLE"

Travel diminished at Bandelier during June 1941. The road from Santa Fe was in terrible condition from the hard winter and spring. Difficult passage over a rough road discouraged the hardiest of visitors, even though the new lodge was open. Business at the lodge was so bad that Mrs. Frey considered increasing rates for the following season. In the late fall of 1941 the lodge shut down for the winter.¹¹⁷ The park staff and Mrs. Frey drained the pipes of the buildings not in use. In November, custodian Chester A. Thomas closed the monument until March of the following year with the justification that "closing will enable the regular ranger force to perform necessary maintenance and repair to roads, buildings and grounds thus effecting economies consistent with the President's wish to hold spending in non-defense activities to a minimum during the National Emergency."¹¹⁸

The new monument had not yet undergone a period of normal operations when the onset of war changed its direction. The old power plant was dismantled for scrap iron.¹¹⁹ In response to later calls to aid the war effort, the park staff assembled 50 pounds of scrap rubber, 500 pounds of copper, 300 pounds of brass, and 6 tons of miscellaneous scrap metal from old car parts and worn-out machinery.¹²⁰ They planted a victory garden in the old Frey orchard, but the bears liked the melons, the wild turkeys loved the raspberries, and the deer seemed to like everything else. In one of his monthly reports custodian Thomas noted, under the subheading "Wild Life Protection," that "the deer are going to need it if they don't stay out of my Victory Garden! They seem to prefer strawberries and cabbage plants; eat them off as fast as I can plant them. They also seem to be very fond of peas, beets, spinach and lettuce. An 8' fence doesn't seem to discourage them in the least."¹²¹ Winter sports during the war consisted of hauling people out of the mud and snow on the approach road coming up from Otowi and sometimes on the entrance road.¹²²

The tire and gas shortages and rationing further depleted visitation. However, decreased visitation did allow the monument staff more time to maintain the buildings. The staff lacked materials but managed to hold things together through hard work and ingenuity. Leaky roofs were the most frequent problems. Besides work on the buildings, the men also had trail work. A heavy storm that hit the area on April 30, 1942, brought high winds that blocked 56 miles of trail with downed timber. A rockslide that spring also poured hundreds of tons of rock into the canyon and almost destroyed the lower falls.¹²³

The lodge opened for the summer season of 1942 but closed early in September. The custodian noted: "There seems to be a question as to the possibility of the lodge opening at all next season and for the duration."¹²⁴ But the war had had only small effects on the monument so far; bigger changes were yet to happen.

In December 1942, the army quietly acquired the Los Alamos Ranch School, about 12 miles from Bandelier.¹²⁵ The army had chosen the site as the home for top secret Project Y of the Manhattan Engineer District and the place where "the solution of specific problems in production of a nuclear weapon" would be found. In short, Los Alamos was the place where the most brilliant nuclear physicists in the world would develop the atom bomb. The army top brass chose the site because it met their criteria: (1) the area was isolated, and real estate prices would be relatively low; (2) they could start work immediately in the existing buildings; (3) adjacent lands were government owned and could be taken over immediately; (4) little clearing would be necessary for future construction; and (5) roads could be improved quickly, and railroad transportation was available nearby.¹²⁶

When the new neighbors began to move in, Custodian Thomas paid a visit to "the Hill" in December 1942 to establish contact between the agencies and find out what he could for his superiors.¹²⁷ He was given no information and very rudely turned away. He reported to the Coolidge and Santa Fe offices that a secret project undoubtedly connected with the war effort was under way and that he had heard rumors about the construction of phone lines and overhead power lines. Yet no one he spoke to knew exactly what was going on, and he was not allowed in.¹²⁸

Thomas was even more irked when the army opened up a borrow pit in the Otowi section of his monument. The army representatives profusely apologized to him, saying that they knew what their responsibilities were but that their contractor had made the mistake. They assured him that they would cooperate better with his agency in the future. The army also began informing him of things that would soon be obvious: they would be doing a massive improvement project on the road and building a telephone line through there.¹²⁹

The army secretly began moving people into the area. Under the direction of J. Robert Oppenheimer, the newly forming laboratory began assembling a cadre of scientists and technical experts from universities, private industry, and branches of the armed forces. The influx of personnel to the top secret project on the Hill created a severe housing shortage. People simply were arriving faster than housing could be built. To alleviate that problem, the Governing Board of the Los Alamos Laboratory searched for temporary housing alternatives nearby. Among the facilities proposed for use was Frijoles Canyon Lodge.

The governing board considered the housing alternatives in mid-May 1943, and on May 24, Oppenheimer "announced that permission had been given to the project to operate Frijoles Lodge and that he hoped it would be open by June 15."¹³⁰ The monument staff found out at the beginning of June and quickly made property inventories. On June 3, Mrs. Frey signed over the right-of-entry, allowing "army and personnel connected with the Los Alamos Base to use the Lodge."¹³¹ As far as the monument staff knew, everyone connected with Los Alamos was army, because all the negotiations for use of the lodge were conducted by the army. The army representatives did nothing to discourage that view.

The staff for managing the lodge arrived on June 7, and more people began arriving June 12. Fifty "army" people moved in at first, and the Park Service was ready to accommodate 50 more, although doing so would have stretched the available space to the limit. The Park Service furnished the "army" with power, sewage, water, garbage disposal, and building maintenance.¹³² The Los Alamos records mention that the army did some road repair and minor roof repairs for the monument.¹³³

Dr. and Mrs. Richard Taschek of Los Alamos were among those who stayed in Frijoles Canyon during that summer.¹³⁴ Their experiences were typical of what the new families faced. Dr. Taschek was a nuclear physicist who had been recruited from Princeton University. They arrived in the area with their six-week-old baby in May and stayed for the first few weeks at Del Monte dude ranch (now Rancho Encantado) – another of the temporary housing alternatives. Conditions at Del Monte were far from ideal for them and the other families with small children. Miss Huntinghouse, the manager of the dude ranch, protested when her ranch ran out of water because the wives washed too many diapers. She allowed the Project Y wives to use her kitchen to heat baby formula only after her workers had finished for the day. For the scientists the commute up to the laboratory from the Rio Grande valley was a long one. The proprietors also caused concern to the army. Miss Huntinghouse could not agree

with the stipulation that she turn away other guests, presenting a major security problem to the laboratory.¹³⁵

Frijoles Canyon Lodge was a much better place for housing the scientists and their families. The monument was isolated, and visitation was minimal because of gas and tire rationing. Water was plentiful. Because the army was in control of the lodge, no additional overnight guests could stay there and security risks were lessened. And the commute was shorter.

The Tascheks were able to move into Frijoles Canyon Lodge in July, still awaiting construction of their new housing in Los Alamos. All of their group and other visitors from the laboratory received their meals in the lodge dining room (B-15), served by the staff that had been hired by the army. At Princeton, the Tascheks had become used to the strict rationing of food and other commodities, but at Bandelier they ate army rations, which meant meat every night. They and the other top secret guests enjoyed a few months of very congenial evenings around the fireplace in the lodge lobby (B-17). They also held small dances there. The Tascheks lived in the southeastern half of B-28, sharing the building with another family. All the group members did their laundry in the sinks in their rooms. Mrs. Taschek remembers the women gathering at the "kiva" (B-21) and getting to know one another well while they heated baby food over a hot plate.¹³⁶

In short, those who lived at the lodge enjoyed their stay (see figure 7). From June through October 1943, it was a social meeting place not only for those who lived there, but also for those who already had housing in Los Alamos and would often come for dinner with the others. "Those atomic people," as Mrs. Frey referred to them, who were not allowed to socialize outside the very tight security of the Project Y personnel, could at least enjoy one another's company in a comfortable setting away from the intensity of the Hill.¹³⁷ The Tascheks still speak of the wonderful layout and architectural design of the buildings, the attention to detail, and the "good feeling" and human scale of the structures.

The housing shortage in Los Alamos was temporarily relieved in October 1943 and, as the custodian stated, "Just as suddenly as they decided to occupy the Lodge, the Army engineers decided to vacate it. All Army personnel except cooks, waitresses and chamber maids was removed October 15." When they left, the custodian noted that all buildings, furniture, and equipment were in excellent condition.¹³⁸ There had been minimal interchange between the monument staff and the guests; the Bandelier staff still referred to them as the army.

After the "army" moved out of the lodge, the monument staff closed the vacant buildings for another winter. They were not to remain closed for long, though. McKee Construction Company of El Paso contacted custodian Thomas in January 1944, asking if it could rent the lodge for a couple of months to house crews who were working on "a contract for construction of an important project at Los Alamos." Mrs. Frey quickly flew into Albuquerque from Washington, D.C., one evening, and the McKee trucks began rolling into the canyon the day after the contract was signed.

That same day, the custodian, the ranger, and the general mechanic on the monument staff each headed up a crew of the contractor's men and began opening the buildings. They turned on water, gas, electricity, and oil and made sewer connections. They also ran into a considerable amount of unanticipated maintenance. Custodian Thomas wrote: "90% of the Lodge roofs proved to be leaky as soon as heat was placed in the buildings and caused some of the ice and snow to melt. Quick repairs were made. A large part of the water pipes in the Lodge apparently did not drain properly when they were drained last fall and frozen lines, some of them broken, had to be dug up from beneath cement

and stone floors and repaired." Also, they brought in an additional power plant to supplement the existing small capacity outfit at the monument. They set up stoves, moved out the hand-carved furniture, moved in government-issued furniture, found some bedding, and "by 9:30 p.m. the cooks served dinner to fifty men and the men went to sleep in comfortable beds."¹³⁹

They managed to house 108 men in the lodge and even converted the lobby (B-17) into a dormitory for 30 men. The contractor reported that he was saving the government \$100,000 by housing the men in Frijoles rather than at Santa Fe. The monument staff seemed quite proud to assist in contributing so much to the "direct war effort."¹⁴⁰

McKee Construction Company moved out of Frijoles Canyon lodge in mid-March, and custodian Thomas had already heard that the army would probably lease the lodge for another summer. The army formally notified him of its intentions in May but did not move in any people. Regular visitors who came to the monument without calling ahead went away furious that they could get neither food nor lodging, and they also were dissatisfied with the meager explanation they received.¹⁴¹ The Park Service knew as little about the secret project as the general public did.

Finally, on July 11, 1944, Mrs. Frey and the army signed a contract, and the Park Service signed another special use permit. The army moved a 50-kilowatt diesel electric generator into the monument, along with 12 managers, chefs, and chambermaids. The custodian's frustration came out in his monthly report: "The lodge was opened with fanfare on the 15th for four guests. The four guests are the only ones to use the Lodge so the army shut down and moved out on the 30th. Cooperating Governmental Agencies: None. Non-Cooperating Governmental Agencies: The Army."¹⁴² The custodian's patience with the army's attitude was wearing thin.

When the army opened the lodge that summer, it did so on a simpler basis than the previous year. Breakfast and dinner were the only meals served. With the construction of a new dormitory under way in Los Alamos, the Hill's administrative board expected to close down the lodge as soon as dormitory space became available but to keep the lodge "in such shape that it can be opened again on short notice."¹⁴³ Consequently, the use was much less intense. Although the army officials reassured custodian Thomas that the buildings would get more use, they sent appraisers in on August 15, 1944, to inventory all the lodge property back to Mrs. Frey. The "army" occupation of the canyon was at an end.¹⁴⁴

Thomas's dealings with the army continued. A few months later in the fall of 1944, Thomas caught the army engineers at work on the Otowi section of the monument. They had cleared the right-of-way for power lines, built two buildings, and "had four bulldozers clearing a route for a superhighway across the monument – all without Park Service permission." The two parties worked out a solution more mutually acceptable after the custodian chased the "bulldozers, armored cars, Tommy-gunning MPs, and a captain of artillers" off the monument and stopped work. They held several meetings and decided that the use of the two buildings and the improvement of an existing road would be allowed under a special use permit. The army promised to behave in the future.¹⁴⁵

The army retained permission to use the lodge during 1945 but never did. The lodge remained closed to the public during the summer of 1945, and the visitors' complaints kept pouring in as in the previous years. The Southwestern Monuments office in Coolidge had requested that custodians include in their monthly reports a summary of visitor reactions to the various monuments during the war.¹⁴⁶

The overwhelming complaints at Bandelier continued to be the lack of food and lodging in the canyon and the condition of the approach road.

President Truman made public the secret of Los Alamos on August 6, 1945,¹⁴⁷ 16 hours after Hiroshima was destroyed and three days before the bombing of Nagasaki. Other than a statement on the great increase in visitation following V-J Day, custodian Thomas's only comment was, "Bandelier received considerable publicity concurrent with the news release of the details of the atomic bomb."¹⁴⁸



Figure 7. For security reasons, photographs of Los Alamos Laboratory employees were not permitted during their stay at Bandelier. This rare 1943 photo of employee Ken Jensen may be the only visual documentation of the 1943-44 use of the lodge by the "army." Note the weathering adobe plaster. (Photo: Courtesy of the Los Alamos Historical Society)

POSTWAR CHANGES

Mrs. Frey received control of Frijoles Canyon Lodge from the army on January 10, 1946. The director's office in Washington quickly allotted \$8,700 for repair of the buildings. Although the buildings were in good structural condition, they needed considerable cosmetic work. The lodge buildings, as well as the NPS administrative buildings, needed painting, calcimining, and reroofing.¹⁴⁹ The custodian noted: "From the fallen plaster and cracks in our buildings, the Atomic Bomb fell on us just about as hard as it did on Hiroshima. Only we withstood three years of bombing."¹⁵⁰ The explosive testing a few miles away had undoubtedly contributed to some of the problems, but rain and melting snow seeping in through the roofs certainly did more damage.

Contracts for repair of the buildings went out for bid that spring, but all the proposals came in too high. When the Washington office delayed the approvals for additional funding, the maintenance program was hopelessly bogged down for the spring and summer. Mrs. Frey went ahead and opened the lodge that summer to meet the demand of the visitors, but her operation was hampered by the disrepair of the buildings, lack of power for refrigeration and lighting, and difficulty in obtaining food and other commodities. The hot-water system for the lodge, in the "kiva" (B-21), was unpredictable at best. The monument's small electric generator could not handle the load of increased visitation, and it continually broke down. The automatic controls of the gas range in the kitchen (B-15) malfunctioned and caused frequent explosions. Maintenance was difficult that season because of lack of funds, personnel, and materials.¹⁵¹

Approval for increasing the \$8,700 repair allotment to \$14,000 came through in July, but all decided to put off the work until autumn, when the lodge would close again for the season. The initial rush of visitors to the monument in May had dropped off considerably later that summer because of bad roads and only intermittent phone service.¹⁵² Those conditions also eased the push for immediate rehabilitation.

Although regular visitation was down, Los Alamos Laboratory scheduled a special event in the canyon. On August 21, 1946, 55 Ph.D.s descended on the monument for tours and dinner. The custodian noted that among those were four Nobel Prize winners "including Dr. Lawrence and Dr. Fermi of Atomic Bomb fame." He also mentioned that they enjoyed the tours, and that "Dr. Fermi bought the book, *Fading Trails*, sat down in the lobby to read it – became so interested he (sic) could not be persuaded to visit the ruins; was two hours late for dinner." Others in the group (figures 8 and 9) were Edward Teller, Julian Schwinger, David Inglis, and I.I. Rabi.¹⁵³ This special event was the first in a series of formal get-togethers at Bandelier sponsored by the laboratory; but most of the use of Bandelier was less formal. Scientists and their families frequented the dining room for the fine cuisine and flocked to the canyon on weekends to begin day hikes there.¹⁵⁴

So that long-overdue maintenance work could be done, the lodge closed early that fall of 1946. The contract for repairs was let to McKee Construction Company – the same company that occupied the lodge during the first months of 1944.¹⁵⁵ The men began painting, repairing, and reroofing the lodge, and when additional funding became available, they reroofed the administrative structures. This type of basic repair work formed the core of the maintenance program in future years.



Figure 8. Scientists from Los Alamos frequently visited Frijoles Canyon Lodge. In this 1946 photograph Ernest Lawrence, Enrico Fermi, and I.I. Rabi sit in front of the fireplace in the lodge lobby. (Photo: Courtesy of Los Alamos Laboratory)

Through the late 1940s and 1950s, the lodge did good but erratic business. Changes in weather quickly altered the condition of the approach road and had a devastating effect on visitation. During one year, fire damage from natural burns was so great that most people thought the monument was closed. Mrs. Frey continued to open the lodge in the spring and close it during the winter. Usually she sublet the dining room and saddle horse concessions so she could concentrate her tireless efforts on running the lodge and taking care of her guests properly.¹⁵⁶

Visitor use patterns changed after the war. The visitors who came usually stayed for shorter periods. More people camped and cooked their own meals.¹⁵⁷ On weekends, even as early as 1947, the canyon was becoming so congested that the custodian complained it was turning into a small Coney Island. He blamed the problem on Los Alamos people, many of whom regarded the park as their own.¹⁵⁸ The very limited canyon space was again becoming too small for the numbers of activities taking place there.

Congestion in the canyon and shifting visitor use patterns brought about changes in operations. The first activity to shut down, in the fall of 1960, was the saddle horse concession. The man to whom Mrs. Frey sublet the concession decided that he did not want to run it anymore. The monument maintenance staff took over the stable and corrals for the stock it used in backcountry work. The monument staff conceded that it might allow the horse concession to continue "after the proposed new development is constructed on the Mesa."¹⁵⁹ This "new development" was Bandelier's Mission 66 program, which improved and augmented the monument's existing facilities. The program included construction of additional residences and a campground on the mesa top above the canyon. The old campground in the canyon was then turned into a picnic area, eliminating some congestion.

The expansion of the park staff through the 1960s taxed not only the limited housing but also the available office space. Visitor needs were changing, too; visitors were seeking quick snacks rather than sit-down dinners, eliminating the need for the large dining room. The people working for the concessioner had no need for housing, because either they were members of NPS families and thus had housing or they lived outside the monument. The administrative offices were very cramped inside the visitor center building (B-2). In 1968, architects and designers in the Southwest Regional Office drew up a set of plans to change the lodge dining room and kitchen (B-15) and lodge employee dormitory (B-16) into administrative offices for their work. They drew plans turning the lodge lobby (B-17) into a curio shop, and the small salesroom there into a snack bar. They also turned the old administrative offices in the visitor center (B-2) into an audiovisual room.¹⁶⁰

When asked about the closing date of the lodge, Mrs. Frey responded "1968,"¹⁶¹ and for her the heart of the lodge was gone after that. A limited operation did continue afterward, but in 1977 the new master plan called for a definite end to Frijoles Canyon Lodge.¹⁶² What little demand there was for lodging in the area could be met by local motels. The concessions agreement between Mrs. Frey and the Park Service was ready to run out in 1978, and the time was right. Mrs. Frey did not seem to mind. She admitted that she was getting on in years, and running the lodge was difficult for her. Former lodge units B-19, B-24A and B-24B, B-27, and B-28 became seasonal housing after the monument staff added kitchenettes. B-23, B-24C and B-24D, and B-29 became the library and storage. The other lodge buildings became park storage facilities, with the exception of B-18, the operator's residence, where Mrs. Frey lived while doing volunteer work for the monument.

Despite all the changes in use, the overall visual effect on the buildings was negligible. The original Pojuaque mud plaster coating the buildings' exteriors weathered off through the years, but it partially

washed into the mortar joints as intended. This effect softened the visual break between the stone and mortar and kept the buildings' lines fluid. Interior painting most often followed the original in pattern and color. Enough of the Spanish colonial design furniture and most of the electrical fixtures and hardware remained in the buildings to emphasize the original architectural intent. To make the buildings more energy efficient, a few changes have come about in recent years. Most of the multilight wood casement windows in the residences (B-7, B-8, B-10, B-11, and B-32) were replaced with single-light thermal casements. The roofs, a constant problem, were replaced with sprayed, elastomer-coated, urethane foam roofing. Some of the residences had skylights – which were the object of so much protest in the 1930s – added to illuminate the dark interiors. Vegetation grew up around the structures, but their basic character was not marred.



Figure 9. This photograph, like figure 8, was most likely taken at a special event at Frijoles Canyon Lodge on August 21, 1946. Here scientists Julian Schwinger, David Inglis, and Edward Teller (with his son) stand in the portal of the Frijoles Canyon Lodge dining room (B-15). (Photo: Courtesy of Los Alamos Laboratory)

SUMMARY

After the administrative dust settled and the boundaries of Bandelier National Monument were decided, Frijoles Canyon emerged as the monument's principal visitor attraction. To provide better access the NPS, under the direction of Superintendent Boss Pinkley of the Southwestern Monuments, built a road into the canyon beginning in 1933. The road was funded from CWA and CCC work relief programs. The road ended near a small hotel run by George and Evelyn Frey, who had settled in the area in 1925.

With the onset of greater flexibility in projects funded by ECW programs, monument development proceeded quickly. Even before the road was constructed, NPS architects and landscape architects had decided on Bandelier's architectural destiny: pueblo revival. Using principles of NPS rustic architecture that revolved around the use of on-site materials and local cultural building traditions, the architects designed most of the Bandelier development around three sides of a plaza. The administrative offices and museum were at one end, the enclosing walls of the maintenance yard at the other end, and the buildings of the new Frijoles Canyon Lodge on a connecting side. The fourth side bordered Frijoles Creek, enhancing the picturesque setting that the designers had sought. Additional structures – park residences – were tucked away out of public view against the cliff to the southeast of the maintenance yard. Steps, walls, terracing, and native plantings completed the overall design scheme.

The large scheme was readily fabricated, using a technique of dividing the buildings or development sections into small units to keep costs low. For example, the small administrative office (one project) and museum building (another project) were later expanded and joined into one large structure (a third project). The lodge units were constructed one building at a time around landscaped interior courtyards. By building many small pieces – each listed as a separate project on the CCC ledgers – and connecting them with a seemingly endless series of portals, courtyards, and walls, the architects were able to construct a cohesive and pleasing development with a very human scale. The way the construction progressed and the end product were totally consistent with the additive quality of pueblo revival architecture.

The CCC workers brought in materials from nearby. Ponderosa pine and aspen came from the adjacent Santa Fe National Forest. After the men hauled the wood to the canyon, they worked the wood into beams, vigas, lintels, posts, corbels, and latias. Stone for the walls and clay for some of the plaster and mortar were brought down from the mesa top. The men most often worked the materials with traditional techniques, such as broadaxes and adzes, and they added a few modern materials, such as portland cement, to improve the final products.

The buildings were designed and executed with careful attention to detail. The stone walls were gently battered, then washed with a thin coat of mud plaster to make them look older and more used. The projecting viga ends were cut with an axe, emphasizing the rustic appearance. Sawn ends would have looked too smooth and neat. Ceilings were peeled vigas that supported aspen latias laid in perpendicular or herringbone patterns. Rooms had corner fireplaces, bancos (benches), and built-in shelves. Interior walls were most often smooth plaster with a painted finish. The museum was graced with paintings by Pablita Velarde and Chris Jorgensen and pastels by Helmut Naumer – among the best of local artists. The furniture for each building was designed by architects Lyle E. Bennett, Lyle N. Barcume, and Charles D. Carter. The CCC furniture makers built desks, beds, wood boxes, and chairs for the lodge cabins. They built the couches, chairs, and coffee tables for the lobby, and dining tables and chairs for the dining room, all of Spanish colonial design. Even the curtain rods picked up the

architectural theme. Light fixtures and switchplates were cut-and-hammered tin, also of Spanish colonial design.

The placement of the buildings on the land created more fine architectural spaces, the spaces *between* the buildings. The landscaping in these spaces enclosed by the buildings' exterior walls finished the development even more by tying it all together. Flagstone walkways connected the buildings and directed pedestrian traffic along gentle routes carefully planted with native vegetation. The vegetation looked as if it had always been there. Changes in grade were gradual, and groups of small stone steps and walls were interspersed among the flagstone landings. Even the parking lot was edged with stone. The guardrail and stone gutters on the entrance road visually connected the road with the rest of the development.

The thoroughness of the designers and the skill of the builders combined to create a unified development. Taken individually, each structure was a well-detailed, solid piece of work. Collectively, the development was a masterpiece, combining fine architecture, landscape architecture, and arts and crafts. The unity of design threaded throughout the landscaping, the buildings, and their contents, even to the hardware on the doors. This unity of design created a sense of place so strong that it predominates today. The whole was greater than the sum of its parts.

The buildings' primary significance lies in the overlapping categories of architecture, landscape architecture, and arts and crafts. Those categories are inseparable in this instance because of their basis in principles of NPS rustic design. The buildings harmonized with their natural setting through the use of on-site materials, small scale, color, texture, massing, and placement on the existing topography. The buildings harmonized with their cultural setting through their pueblo revival style, appropriate for that area of the Southwest, and through the materials and techniques with which they were executed. The cultural connection carried through the interior of the buildings in paint schemes and room configurations and in the details of exposed vigas and latias, hewn lintels, carved corbels, handmade furniture, and light fixtures. Constructed by the CCC, the development became a monument to its hard work and the high level of craftsmanship it achieved in the building trades.

The changes that have been made to the buildings over the years have been necessitated mainly by changing uses. Most of the changes were made to the interiors and are reversible. Despite these changes, the buildings remain the largest and most unified collection of buildings designed by the NPS and executed by the CCC in the entire park system. The buildings became a national historic landmark in June 1987.

On a secondary level of significance, the buildings played a minor supportive role to a pivotal event in global history during World War II. The buildings temporarily housed people connected with Project Y of the Manhattan Engineer District – the builders of the atom bomb. Frijoles Canyon Lodge was also a place where they had small gatherings or congenial dinners in a comfortable, low-key setting just a few miles away from their work on "the Hill."

ENDNOTES

1. John Ise, *Our National Park Policy*, 147-148, 164-165.
2. 39 Statute 1764, Presidential Proclamation 1322, February 11, 1916. Detailed accounts of Bandelier's administrative history appear in Rothman, *Bandelier National Monument*.
3. Ise, *Our National Park Policy*, 353.
4. Horace Albright to Jesse Nusbaum, September 23, 1930; Roger Toll to Nusbaum, September 1930; and other letters, Nusbaum's File, Southwest Regional Office library, NPS, Santa Fe.
5. Nusbaum to Toll, October 29, 1930, Nusbaum's File.
6. Arno Cammerer to Nusbaum, August 12, 1931, Nusbaum's File; and Jesse Nusbaum, M.R. Tillotson, and Roger W. Toll, *The Bandelier National Monument and the Proposed Cliff Cities National Park*. Report to Horace M. Albright, director, NPS, November 26, 1930, copy on file at Southwest Regional Office library, Santa Fe.
7. Albright to Nusbaum, December 7, 1931, Nusbaum's File.
8. Nusbaum to Albright, March 18, 1932, Nusbaum's File.
9. Ibid.
10. 47 Statute 2503, Presidential Proclamation 1991, February 25, 1932.
11. Edgar Rogers to Boss Pinkley, June 13, 1932, records of the NPS, record group (RG) 79, file 200, Denver Federal Records Center (DFRC).
12. Rogers to Pinkley, July 30, 1932, and other letters, RG 79, file 200, DFRC.
13. Nusbaum to Albright, November 8, 1932; and Nusbaum to A. Gilberto Espinosa, assistant U.S. attorney, Department of Justice, November 16, 1932, Nusbaum's File.
14. Nusbaum to Toll, March 18, 1932; and Toll to Nusbaum, March 24, 1932, Nusbaum's File.
15. The Fred Harvey Company, the official concessioner for the Atchison, Topeka, and Santa Fe Railway, ran guided tours from major hotels along the southwestern route. Known at various times as the Harvey Detours, Harvey Indian Detours, and Harveycar Tours, the touring cars brought visitors to a variety of southwestern archeological sites and Indian reservation locations.
16. "Walk with Mrs. Frey to Old Lodge (Ten Elders) and Ruins," June 30, 1979, by Mrs. Frey, Chris Judson, and others. Oral history tape on file at Bandelier National Monument.
17. U.S. Department of Agriculture, *In the Land of the Ancient Cliff Dwellers*, USDA Miscellaneous Circular 5 (Washington, D.C., 1925), 3.
18. Toll to Nusbaum, October 27, 1930, Nusbaum's File.
19. Rogers to Pinkley, June 17, 1932, RG 79, file 200, DFRC.
20. Rogers to Pinkley, August 25, 1932, RG 79, file 200, DFRC.

21. Verne Chatelain to Frank Kittredge, September 6, 1932, RG 79, file Bandelier 1932-1933, DFRC.
22. Kittredge to Walter Attwell, November 12, 1932, RG 79, file 200, DFRC.
23. Kittredge to Albright, November 12, 1932, Nusbaum's File.
24. A.E. Demaray to Kittredge, October 18, 1932, RG 79, file 200, DFRC.
25. Pinkley to Albright, October 8, 1932, Nusbaum's File.
26. Nusbaum to Albright, November 7, 1932, Nusbaum's File.
27. Nusbaum to Albright, November 7, 1932, RG 79, file 200, DFRC.
28. A.E. Demaray to Nusbaum, November 18, 1932, RG 79, file 200, DFRC.
29. Harlan D. Unrau and G. Frank Williss, *Administrative History: Expansion of the National Park Service in the 1930s*. (Washington, D.C.: NPS, 1983), p. 77.
30. Earl Jackson to Boss Pinkley, July 16, 1934, RG 79, file 200, DFRC.
31. Unrau and Williss, *Administrative History*, 80.
32. The drawings for Bandelier were most often signed by the designer, checked by a series of architects and engineers, recommended by the chief architect, cleared for engineering by the chief engineer, concurred with by the superintendent and the sanitary engineer, and approved by the director of NPS.
33. Unrau and Williss, *Administrative History*, 79.
34. NPS, *Report of the Director of the National Park Service to the Secretary of the Interior, 1918*. (Washington, D.C.: U.S. Government Printing Office), 274.
35. William C. Tweed, Laura E. Soullière and Henry G. Law, *National Park Service Rustic Architecture 1916-1942* (San Francisco: NPS, 1977), passim.
36. Walter Attwell to Boss Pinkley, April 18, 1933, RG 79, file 200, DFRC.
37. Pinkley to the director, April 21, 1933, RG 79, file 200, DFRC.
38. Edgar Rogers to Pinkley, June 29, 1933, RG 79, file 200, DFRC.
39. Pinkley to the director, August 28, 1933, RG 79, file 200, DFRC.
40. Frank Kittredge to Pinkley, September 7, 1933, RG 79, file 200, DFRC.
41. A.E. Demaray to Pinkley, September 26, 1933, RG 79, file 200, DFRC.
42. Pinkley to Major H.T. Aplington, 7th Cavalry, Santa Fe, September 6, 1933, RG 79, file 201, DFRC.
43. Pinkley to Frank Kittredge, October 26, 1933, RG 79, file Bandelier 1932-33, DFRC.
44. Standard Form 71104-72231, RG 79, file 201, DFRC.

45. Rogers to Pinkley, October 1, 1933, RG 79, file 201, DFRC.
46. Rogers to Pinkley, October 9, 1933, RG 79, file 200, DFRC.
47. Smith to Pinkley, October 16, 1933, RG 79, file 200, DFRC.
48. Draft telegram handwritten by Pinkley on back of telegram received by Pinkley dated October 18, 1933, RG 79, file 200, DFRC.
49. Martin Evenstad to Pinkley, October 25, 1933, RG 79, file 200, DFRC.
50. Evenstad to Pinkley, November 15, 1933, RG 79, file 201, DFRC.
51. "Custodian's Monthly Narrative, November 1933," RG 79, file 207-02, DFRC.
52. Pinkley to the director, November 16, 1933, RG 79, file Bandelier 1932-33, DFRC.
53. "Custodian's Monthly Narrative, December 1933," RG 79, file 207-02, DFRC.
54. Charles Richey and Lyle Bennett, "Report to the Chief Architect through the Superintendent of Southwestern Monuments. Final Construction Report. Conservation Work – CCC Camp NM-1M, November 16, 1933 to April 31, 1934 (Second Period) Bandelier National Monument," June 19, 1934, Office of the Chief, Western Division, Branch of Plans and Design, San Francisco, RG 79, file 000, DFRC. Although it seems very odd the actual file number on the file is "000."
55. Martin Evenstad and Walter Attwell to the director, November 16, 1933, RG 79, file 201, DFRC.
56. Richey and Bennett, "Report to the Chief Architect," 4.
57. Evenstad to Boss Pinkley, November 15, 1933, RG 79, file 201, DFRC.
58. "Custodian's Monthly Narrative, May 1934," RG 79, file 207-02, DFRC.
59. "Custodian's Monthly Narrative, July 1936," RG 79, file 207-02, DFRC.
60. Although Nusbaum expressed some concern about pothunting by the CCC men (in a letter to Walter Attwell of November 16, 1933, RG 79, file 200, DFRC), the first educational effort the park staff put forth was to teach the men about the resources (Robert Rose to Evenstad, November 14, 1933, RG 79, file 201, DFRC). Acting superintendent Evenstad wrote to Nusbaum on November 29, 1933 (same file), stating that he did not know of any specific CCC pothunting incidents at Bandelier. These are the only references to pothunting found in the literature.
61. H.B. Chase, *Bandelier National Monument Emergency Conservation Work – Report Covering Activities of the Camp for the Six Months Period Beginning October 1, 1934 and Ending March 31, 1935*, submitted April 17, 1935. No pagination. On file at Bandelier.
62. H.B. Chase, *Reporting E.C.W. Activities for the Six Months Period from April 1 to September 30, 1935 at Bandelier National Monument*, submitted October 1, 1935. No pagination. On file at Bandelier.
63. "Custodian's Monthly Narrative, August 1936," RG 79, file 207-02, DFRC, and ECW Forestry Report, November 25, 1936 in RG 79, file Bandelier NM-1 – personnel, V-1-CI-b-NM, DFRC.

64. "Record of Inspection," filled out by Raymond Higgins, October 10, 1939, in RG 79, file 204, DFRC.
65. Lyle Bennett to Pinkley, March 21, 1934, RG 79, file 201, DFRC.
66. "Custodian's Monthly Narrative," April and May 1934, RG 79, file 207-02, DFRC.
67. "Talk by Mrs Frey, Albert Gallegos and Manuel De Vargas," June 23, 1980. Oral history tape on file at Bandelier National Monument.
68. Pinkley to Hub Chase, July 16, 1934, RG 79, file 201, DFRC; Hugh Miller to Pinkley, October 12, 1938, RG 79, file 204-30, DFRC; and others.
69. Attwell to Pinkley, January 9, 1934, RG 79, file 000, DFRC.
70. Ibid.
71. Ibid.
72. Hugh Miller, "Bandelier E.C.W.," March 16, 1934, RG 79, file 000, DFRC.
73. Thomas C. Vint to the director, RG 79, file 000, DFRC.
74. Series of telegrams from Pinkley and others, RG 79, file 000, DFRC.
75. Pinkley to Evenstad, June 13, 1934, RG 79, file 200, DFRC.
76. "Custodian's Monthly Narrative, May 26, 1934," RG 79, file 207-02, DFRC.
77. Charles A. Richey to Pinkley, May 12, 1934, RG 79, file 201, DFRC.
78. Charles A. Richey, "Report to the Chief Architect . . .," submitted August 12, 1933, RG 79, file 200, DFRC.
79. Charles A. Richey to Edward Nickel, June 23, 1934, RG 79, file 000, DFRC.
80. Ibid.
81. Bunting, *John Gaw Meem*, 7-9, 14-17, 73-86.
82. "Custodian's Monthly Narrative, January 1934," RG 79, file 207-02, DFRC.
83. "Report to the Chief Architect . . . 5th Period (1936)," RG 79, file 000, DFRC.
84. Ibid.
85. "Custodian's Monthly Narrative, November 1938," RG 79, file 207-02, DFRC.
86. "Final Construction Report – Paving Entrance Road and Parking Area," RG 79, file 107.22, DFRC.
87. Charles A. Richey and Jared B. Morse, "Report to Thomas C. Vint . . . on Emergency Consideration Work . . . 3rd Enrollment Period (1934) . . .," RG 79, file 000, DFRC.
88. Walter Attwell to Frank A. Kittredge, 11 March 1934, RG 79, file 000, DFRC.

89. Charles Richey to William Carnes/Edward Nickel, 19 September 1934, RG 79, file 000, DFRC. Boss Pinkley wrote to the director about increasing the \$1,500 limitation on construction projects at Bandelier and Chiricahua. He received word back that the limitation applied to monuments as well as parks. The Forest Service limitation was \$2,500, so a precedent did exist for constructing ECW buildings on federal lands for amounts in excess of \$1,500. Hillory Tolson concluded, "Occasionally in certain special instances where the \$1,500 limit appears to be too low for a building which is essential and not of too elaborate a character to be undertaken under the ECW program, administration consideration is given to an increase in this amount. In these instances complete estimates and thorough justifications must be submitted and must have the concurrence of the Branch of Engineering and Branch of Plans and Design before they can be given favorable consideration by the Director." (Hillory Tolson to Pinkley, 28 January 1936, RG 79, file 000, DFRC).
90. H.B. Chase, "Reporting ECW Activities . . . April 1 to September 30, 1935 . . .," no pagination. Report on file at Bandelier.
91. Ibid.
92. F.A. Kittredge to Boss Pinkley, 8 January 1936, RG 79, file 000, DFRC.
93. Earl Jackson to Boss Pinkley, 25 April 1935, RG 79, file 200, DFRC.
94. Earl Jackson to Pinkley, 29 July 1935, RG 79, file 200, DFRC.
95. Rothman, *Bandelier National Monument*, 85-86.
96. Conrad Wirth to Pinkley, 10 March 1936, RG 79, file 000, DFRC.
97. Hugh Miller to assistant regional officer, Santa Fe (ECW?), 9 February 1937, RG 79, file Bandelier NM-I-Personnel V-1-C1-b-NM, DFRC.
98. Boss Pinkley to Earl Jackson, 17 June 1935, RG 79, file 000, DFRC.
99. Pinkley to William Carnes, 26 December 1935, RG 79, file 000, DFRC.
100. Carnes to Pinkley, 6 January 1936, RG 79, file 000, DFRC.
101. Hillory Tolson to Pinkley, 3 March 1939, RG 79, file 200, DFRC.
102. Tolson to the director, 13 May 1939, RG 79, file 601-03.1, DFRC. The new location for the Bandelier CCC camp was proposed to be built on the site of Fl 9-NM, an earlier Forest Service CCC camp. The author did not have time to track down whether the Water Canyon site and F-19-NM are the same. Building a new CCC camp on an old site would be very sensible. The site would already be graded, and water would be readily available. The new camp at Water Canyon was called NP-4-N; the one in Frijoles Canyon had been NM-1-n.
103. "Daily Reports," by CCC Inspector Raymond Higgins, July 1939, RG 79, file 204, DFRC.
104. Hub Chase to Hugh Miller, 27 February 1940, RG 79, file 200, DFRC.
105. Milton McColm (acting regional director) to Frank Andrews, forest supervisor, Santa Fe National Forest, 7 March 1940, RG 79, file 200, DFRC.
106. Milton McColm to the director, 5 March 1940, RG 79, file 200, DFRC.

107. "Custodian's Monthly Narrative, January 1941," in "Superintendent (sic) Monthly Narrative 1941-1950." Bandelier National Monument.
108. "Custodian's Monthly Narrative, May 1941." Bandelier.
109. "Custodian's Monthly Narrative, June 1941." Bandelier.
110. "Custodian's Monthly Narrative, July 1941." Bandelier.
111. Form 10-374, Record of Inspection, 18 June 1941, RG 79, file 204, DFRC.
112. "Custodian's Monthly Narrative, July 1941." Bandelier.
113. See records of inspection, forms 10-374, RG 79, file 204, DFRC.
114. A.W. Stockman, special investigator, Headquarters Company 815 CCC, "Camp NM 1 N Bandelier Supplementary Report," attached to letter Hub Chase to Pinkley, January 11, 1939, RG 79, file 204, DFRC.
115. Miller to Pinkley, August 29, 1938, and October 12, 1938, RG 79, file 204-30, DFRC.
116. Miller to Pinkley, October 12, 1938, RG 79, file 204-30, DFRC. CCC building went on at Chiricahua National Monument, but the scale was considerably smaller – visitor center, residences, campground, trails and the like – and without the extravagance of as many finely honed details as at Bandelier.
117. Reports of inspection, Bandelier National Monument, by Hugh Miller, superintendent of Southwestern Monuments, June 21, 22, and October 5, 1941, RG 79, file 204, DFRC.
118. Bulletin, Custodian Chester A. Thomas, November 27, 1941, RG 79, file 200, DFRC.
119. "Custodian's Monthly Narrative, December 1941." Bandelier.
120. Charles A. Richey, superintendent, Southwestern Monuments, to the Treasury Department, November 17, 1942, RG 79, file 200, DFRC.
121. "Custodian's Monthly Narrative," September 1943 and June 1944, Bandelier.
122. "Custodian's Monthly Narrative, January 1942," Bandelier.
123. "Custodian's Monthly Narrative," April, May, and October 1942, Bandelier.
124. "Custodian's Monthly Narrative, September 1942," Bandelier.
125. "Custodian's Monthly Narrative, December 1942," Bandelier.
126. Truslow, *Manhattan District History*, 1-3.
127. Ibid., 3. The name "Los Alamos" was classified information at the time. People from Santa Fe referred to it as "the Hill." People connected with the project called it Site Y, Project Y, the Zia Project, Santa Fe, Area L, Shangri La, Happy Valley, and other names.
128. Ross Maxwell, acting superintendent, memo to the files, December 19, 1942, RG 79, file 200, DFRC.

129. Maxwell, memo to the files, January 11, 1943, RG 79, file 200, DFRC; and "Custodian's Monthly Narrative, February 1943," Bandelier.
130. Los Alamos Laboratory, "Minutes of the Meeting of the Governing Board," 17 May 1943. Los Alamos Laboratory Records Center and Archives (hereafter LANL-RCA).
131. Los Alamos Laboratory, "Minutes of the Meeting of the Governing Board," May 24, 1943, LANL-RCA.
132. "Custodian's Monthly Narrative, June 1943," Bandelier.
133. Ibid.
134. "Interview with Dr. and Mrs. Richard Taschek, April 13, 1984," on file at Bandelier.
135. Ibid. Also, the laboratory's minutes for September 9, 1943, LANL-RCA, record the dissatisfaction with Del Monte ranch. Besides taking additional guests, Miss Huntinghouse imposed the conditions "no children, no laundry, wives will take care of their own rooms." The board considered the situation unavoidable and "unsatisfactory from the security point of view" and "reluctantly approved housing people in Del Monte" while waiting for construction at Los Alamos to catch up with the demand.
136. Taschek interview, Bandelier.
137. "Interview with Mrs. Evelyn Frey, April 10, 1984," on file at Bandelier.
138. "Custodian's Monthly Narrative, October 1943," Bandelier.
139. "Custodian's Monthly Narrative, February 1944," Bandelier. McKee Construction Company was building housing in Los Alamos (Kunetka, *City of Fire*, 94, 117).
140. "Custodian's Monthly Narrative, February 1944," Bandelier. The custodian also went into detail about "warrants sworn out by the U.S. Employment Service" against himself and the head of McKee Construction charging aggravated racial discrimination in housing. The warrants were subsequently dropped.
141. "Custodian's Monthly Narrative," March, May, and June 1944, Bandelier.
142. "Custodian's Monthly Narrative, July 1944," Bandelier.
143. Los Alamos Laboratory, "Minutes of the Meeting of the Administrative Board," May 25 and July 6, 1944, LANL-RCA. A list of personnel using Frioles Canyon Lodge during 1943 was unavailable. None of the 1944 overnight guests' names could be tracked down through readily available sources. Dinner guests in 1944 included Joseph Hirschfelder, chief consultant on bomb damage experiments; Marshall Holloway, responsible for pit assembly and "final merging of fissionable material"; Eric Jette, who cast and shaped the sphere of plutonium for Fat Man; Captain William S. Parsons of the navy, the head of Ordnance Division, who refined the external casings and improved the in-flight characteristics of Fat Man and Little Boy; L.G. Parratt, head of instrumentation; and David Hawkins, head of administration of security matters and later in charge of the history group (Sources: Kunetka, *City of Fire*; Truslow, *Manhattan District History*; and Hawkins, *Manhattan District History*; and memo, Muncy to Oppenheimer, October 25, 1944). Mrs. Frey stated in the April 10, 1984, interview that she and Robert and Kitty Oppenheimer were close friends, and that the Oppenheims often stayed with her. She was somewhat unclear about the exact time period.
144. "Custodian's Monthly Narrative, August 1944," Bandelier.

145. "Custodian's Monthly Narrative, October 1944," Bandelier.
146. "Custodian's Monthly Narrative," *passim.*, June 1942 through September 1944, Bandelier.
147. *Santa Fe New Mexican*, August 6, 1945.
148. "Custodian's Monthly Narrative, September 1945," Bandelier.
149. According to Harris, *Dictionary of Architecture and Construction*, the process of calcimining or kalsomining consists of "a low-cost wash coating consisting of glue and whiting (usually powdered calcium carbonate) mixed with water, sometimes tinted; used on plaster or masonry-type surfaces." The recipe for Bandelier's calcimining does not appear in the documents.
150. "Custodian's Monthly Narrative, January 1946," Bandelier.
151. "Custodian's Monthly Narrative," April and May 1946, Bandelier.
152. "Custodian's Monthly Narrative, July 1946," Bandelier.
153. "Custodian's Monthly Narrative, September 1, 1946," Bandelier.
154. "Custodian's Monthly Narrative," July and September 1951 and others, Bandelier.
155. "Custodian's Monthly Narrative, September 1, 1946," Bandelier.
156. "Custodian's Monthly Narrative," September and October 1948, October and December 1949, October 1950, July and November 1951, and May 1956, Bandelier.
157. "Custodian's Monthly Narrative," June 1949 and July 1952, Bandelier.
158. "Custodian's Monthly Narrative, June 1947," Bandelier.
159. "Custodian's Monthly Narrative," September and November 1960, and Frey interviews, on file at Bandelier.
160. Drawings 315/80000, 315/80000A, and 315/80025, Denver Service Center.
161. Frey interview, April 10, 1984, on file at Bandelier.
162. *Final Master Plan, Bandelier National Monument*, April 1977, 13, Bandelier.

PHYSICAL HISTORY

THE SITE

General

Included in this study area are the 31 CCC buildings in Frijoles Canyon in the residential, maintenance, administrative, lodge, and campground areas, and the fire lookout and entrance station on the entrance road. The landscape features in the immediate vicinity of the residential, administrative, lodge, maintenance, and parking areas are included. Excluded from this study are the campground and the entrance road and their surrounding landscape features. The boundaries of the national historic landmark district are stated in the nomination form in appendix E.

All the elements of the built environment exemplify a southwestern interpretation of the rustic design ethic. The landscape (figure 10) is one of the primary unifying characteristics of the national historic landmark district. The development is a geographical area that possesses a significant concentration of historic landscape features typical of the CCC era.

The components of the landscape include natural features; circulation systems; vegetation; drainage systems; topography and grading; the constructed elements of buildings, walls, walkways, and the like; site furniture; vistas; the spaces between the buildings; and patterns of spatial organization. This study focuses on only the vegetation, drainage, and some of the constructed elements.

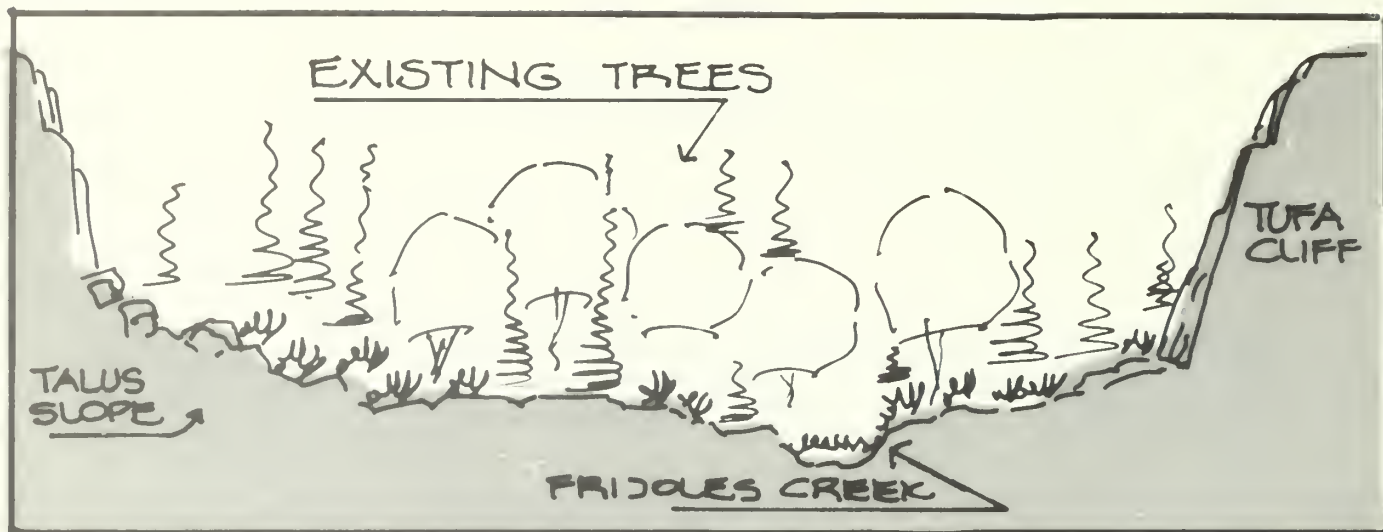
The general location for the Frijoles Canyon development was determined by such factors as the availability of water, the location of the cultural resources, politics, and physiographic features. The site development in the canyon was divided into four principal use areas: the campground, the lodge and administrative area, the maintenance area, and the residential area.

The region's dramatic and significant geomorphology serves as a backdrop for the Bandelier building site in Frijoles Canyon (figure 11). The canyon's 400-foot vertical north face of exposed rock and niches relates to activity within the Jemez volcanic field where recent events, geologically speaking, have left deposits of silicic tuff and pumice, which give the region much of its unique character. This porous tuff that underlies much of the Pajarito Plateau is a pyroclastic igneous rock composed of fragments of ash and gas-rich rock material broken and deposited through volcanic action. This abundant and easily worked stone was used for many of the region's prehistoric structures, as well as the historic ranch, Forest Service, and CCC buildings. For the latter, the bulk of this stone was quarried and cut on the mesa at the current amphitheater site and transported to the canyon valley. The valley itself was cut over the years by the flow of Frijoles Creek toward the Rio Grande, and it was beside the creek that the historic buildings were built.

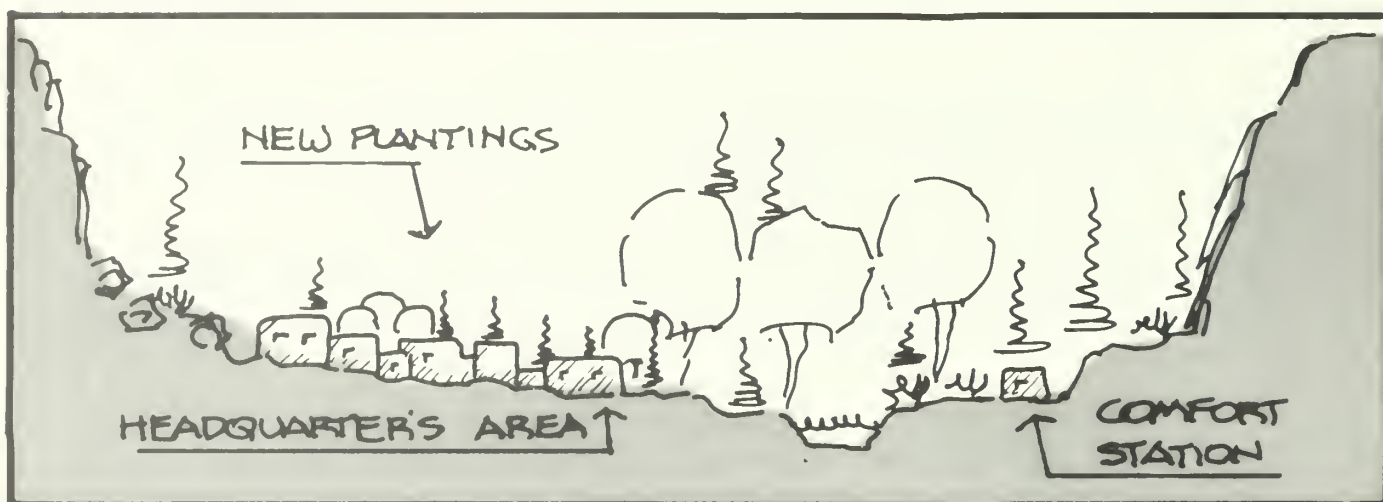
Circulation

The primary access for vehicular traffic was the entrance road. Secondary circulation systems included paved pedestrian paths linking the four use areas.

Prior to construction (1930).



At close of construction (1941).



Present appearance (1988).



Figure 10. Evolution of the canyon landscape.



Figure 11. Looking northeast, 1940s, showing geologic character of cliff face.

The paved entrance road that was initially constructed in 1934 (over much local protest) as a gravel road made a tremendous impact in terms of opening up the park. That the road was well received is evidenced by this excerpt from a 1934 "Southwestern Monuments Monthly Report":¹

Letter from M.O. Evenstad, acting custodian to Boss, . . . 'widening of the road from a 12-foot truck trail standard to the 22-foot width must be credited entirely into the CWA program and makes the road a real highway. As a safety factor, the wider road is very important, especially along the cliff side where the road drops off into the canyon. A 12-foot road there would have been far from safe, especially for people not familiar with the road. The maximum grade along this part is only eight percent. We are rather proud of this road, both from its appearance and its utility, and the fact that it gives the public a way of getting into the canyon without resorting to a tiresome walk up and down the trail.'

Initially this entrance road passed underneath the portal between B-2 and B-9, crossed the creek, and extended to the guest ranch and overnight campground farther up the canyon. Historically, visitors stopped their cars at B-2 and checked in with the monument staff. This practice had ceased by the time the entrance station (B-26) was constructed in 1940.

The original parking spaces were along the perimeter of the buildings and along the curbed sidewalk near the rito. A central planted island screened the visitors' view of the principal buildings as they approached from the entrance road (figures 12-14).

Two small paved parking areas were to the east of the dining room and within the maintenance complex of B-3 through B-6, both shielded from public view by masonry walls integrated with the adjacent buildings.

Landscape Structures and Related Features

All the buildings were constructed in the southwestern pueblo revival style with characteristic design elements, including battered stone walls, vigas, portals, parapet roofs, canales, and small changes in level to reflect the local topography. Masonry walls, portalled patios, flagstone walks, terraced courtyards, indigenous vegetation, and rock outcroppings integrated the various buildings into a unified complex. Primarily in the cabin and canyon court areas, rock ledge retaining walls created terracing that further accentuated the site's topography (see figure 14). Although this terracing gave the site much of its endearing quality, it also imposed certain limitations in terms of handicapped accessibility.

Early photographs show that the complex had a strong pueblo character in its geometric massing, scale, and texture. As viewed from the parking area, the cabin-hotel development area had a particularly unified massing, largely because of the foreground portal wall, which visually blended the buildings into one (see figure 15).

The built features, which included masonry walls, portals, patios, flagstone walks, gates, courtyards, and site furniture such as lighting fixtures, picnic tables, and signs, were all elements that helped to unify the building complex. The use of local stone, wood, and mud plaster typified CCC construction techniques at Bandelier. The result of this work was a naturalized environment harmonious with the setting and cultural resources.

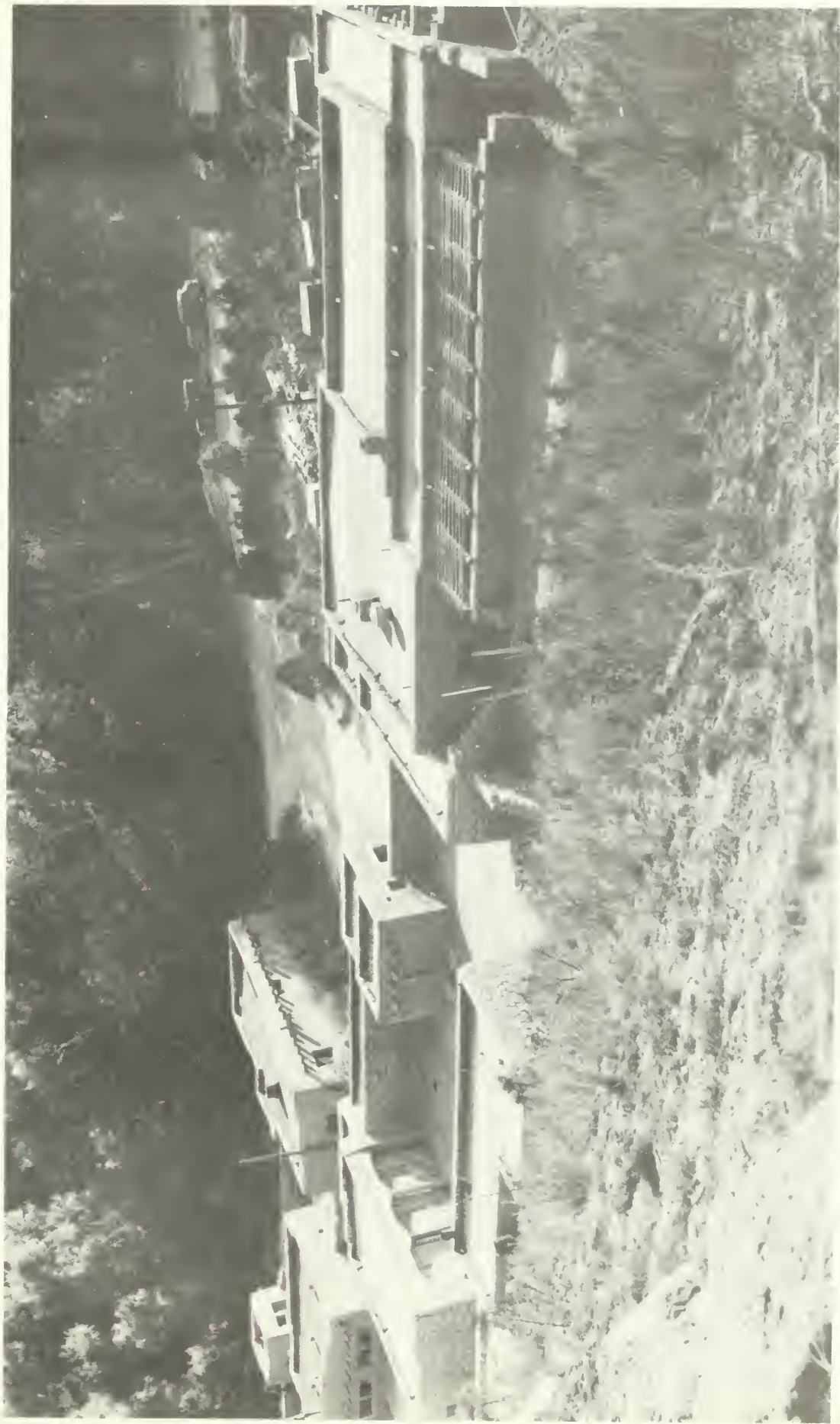
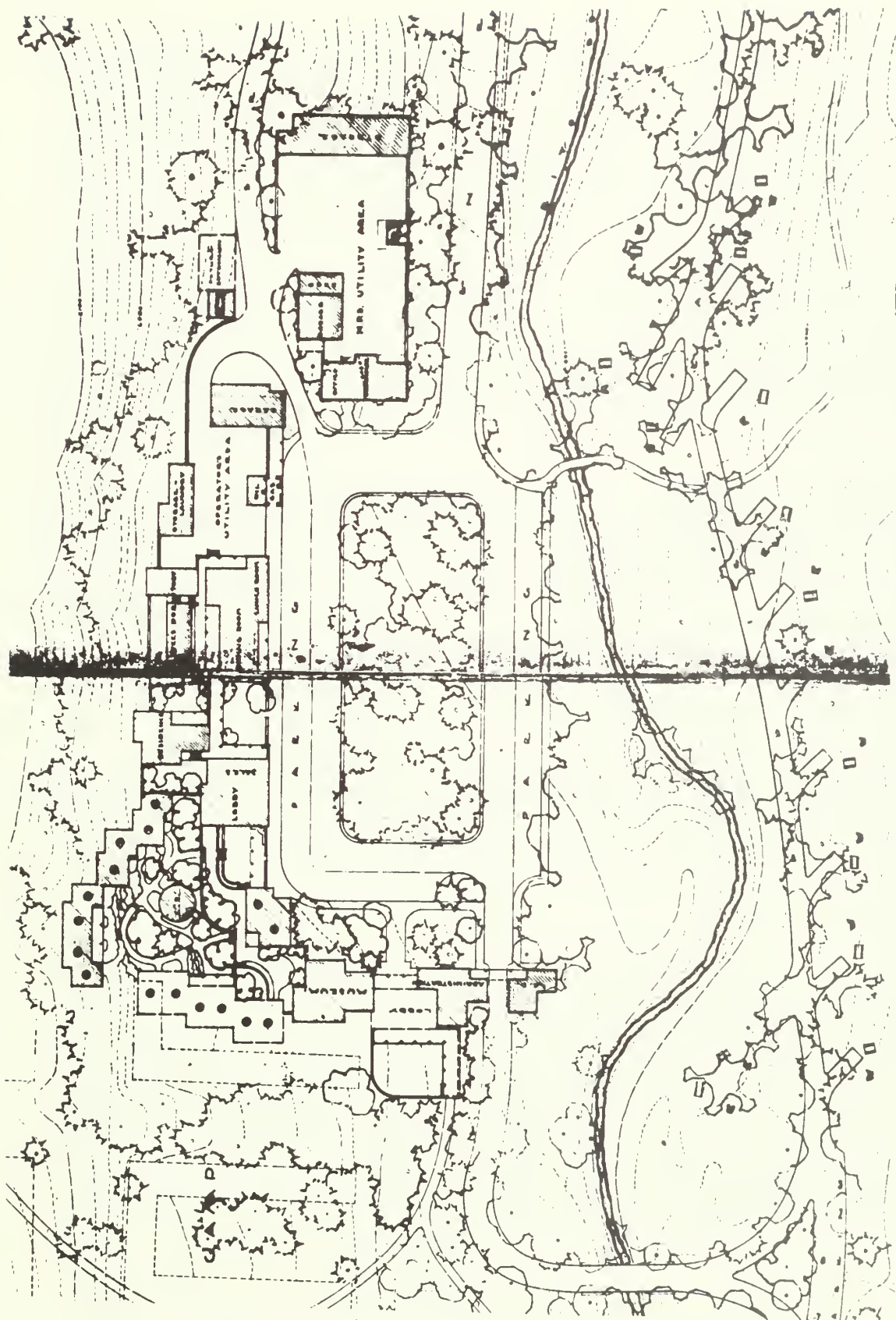


Figure 12. The parking island in the background, late 1931. Note the heavy massing of evergreen trees in the island and in the foreground of the warehouse building, B-3.



Figure 13. The parking island looking south, late 1930s. The island has been planted and stone curbed.



Vegetation

The underlying intent for the vegetative plantings at the site was based in the rustic design ethic. Landscape architects concentrated on using native plant materials in a fashion that made the development – both the buildings and the vegetation – seem as natural as possible in the setting. At Bandelier, the landscape men planted large confined areas like the parking island and the campground area in a manner that mimicked the surrounding vegetation. The CCC men restored large open fields.

Native grasses were transplanted from the mesa top to provide a ground cover around the visitor center and in the cabin courtyard. Originally, indigenous grasses and vegetation were planted and gave a much stronger regionalism to the developed area. In addition, these grassed areas were top dressed with forest duff and strategically placed boulders. This landscaping provided a harmonious introductory image to visitors' contact with the park's prehistoric Indian culture in addition to a sympathetic site relationship with the buildings.

The vegetation that existed in the canyon when the landscape architects and CCC workers arrived included indigenous yucca, shrubby plants, grasses, and vines. Cottonwoods, ponderosa pine, and box elder trees lined the valley floor along the creek.

That the vegetative character appealed to early NPS officials is indicated from the following quotation taken from the July 1933 "Southwestern Monuments Monthly Reports"²:

On June 20 Ben Thompson and George M. Wright, Chief of the Wildlife Division, made an inspection of Bandelier. We were accompanied on this trip by Mr. Pinkley and Mr. Vint. We were guided by the ranger in charge Ed Rogers.. The following observations bear on the development of this monument: The luxurious growth of box elder wood, alder willow, and other trees and shrubs which fairly buries the stream of cool water in Frijoles Canyon is perhaps the greatest charm of Bandelier certainly the factor that will contribute to the comfort and pleasurable relaxation of visitors above all else.

After buildings were completed, plantsmen were detailed to revegetate the building sites. From 1934 to 1940 the CCCs carried on this planting program. Occasional lists of plant quantities and information have surfaced, and from these we can visualize the planting operation. As soon as a portion of the building construction was completed, the grading and planting started immediately; thus a continuing effort (four months per year) toward planting was taking place for the entire seven-year span. Plants were primarily transplanted from native surroundings. During April 1940, large numbers of seedlings were obtained from a local nursery of the Soil Conservation Service (SCS) (appendix C). These seedlings were not natives, but all could survive Bandelier's conditions and many exist today. The exact numbers and species of plants transplanted into Bandelier are not known, but a reasonable estimate of the number of trees and shrubs planted is in the hundreds.

Usually an estimated 100 trees and 150 shrubs were transplanted annually. During an efficient month, however, three crews with good hauling equipment could plant as many as 220 trees and 160 shrubs.

This planting effort was broad in scope, covering not only the headquarters area but also the entrance road, stable, residential area, campground, the old CCC camp area, and the old hotel area.

The planting technique improvised by these men varied from park to park. The slip blade technique developed at Mesa Verde National Park did not apply without shallow bedrock, and the bare root or loose ball techniques of the East were not successful.

The preferred transplanting method at Bandelier was to move the tree with the ball frozen. Following selection of a tree within 5 miles of the site, the tree would be partially dug and root pruned in spring, then left to root heal until winter. After the tree ball was frozen, a belt of chain harness was slipped over the ball and pulled tight, and the ball was hoisted from the ground with a truck crane. Trees with root ball diameters of up to 3 feet were moved. The expedient field techniques developed by these plantsmen were very successful, judging from the low plant mortality. Many of the trees remain today along with many volunteer trees and shrubs.

In addition to transplanting natives and planting seedlings, the landscape crews had to deal with occasional infestations of insects attracted to the weak, newly planted pines. A concerted effort was established in May 1939 to eradicate exotic plants such as silverleaf poplar, Lombardy poplar, and peach trees. This task indicates that an underlying philosophy existed, defining both acceptable and unacceptable plants for Bandelier.

The foremen also followed instructions to plant vegetation in the traditional styles seen in the surrounding culture, such as framing entrances with native plants or adding vegetation at the bases of walls to soften the architectural lines.

Research on this project uncovered no actual plant lists or planting plans for this developed area. Although lists may have existed, most of the work probably was done under verbal direction from landscape architect Jared Morse, forestry foreman James Fulton, and a landscape foreman named Mr. Blinks.

Drainage

Drainage was a designed element of the Frijoles Canyon landscape. Causes of drainage problems included sheet wash from downpours, spring runoff, and creek flooding in the steep-walled canyon, all of which forced the designers to take proper drainage into account.

Any drainage philosophy is usually driven by facility-siting techniques (or vice versa). Because this facility was placed on a southwest-facing talus slope, the techniques of draining the site were to use a major upslope diversion ditch, depend on percolation of runoff into porous soil, develop sheet surface drainage around buildings and across parking areas, and (for trapped water) install an occasional subsurface to drain to the creek (see Existing Storm Drainage map in "Existing Conditions" section).

A major drainage diversion swale was installed on the steep and loose soils upslope of the highest tier of buildings in the cabin area. Periodically, the creep of the slope filled the ditch and caused debris flow and maintenance problems (see memo, appendix B). High on the mesa top, other diversion ditches were cut into the soil to divert major storm runoff away from this building complex.

Foundation drains were not shown on the original design drawings and no evidence of their use was apparent, at least not for the upper tier of buildings. Because of the side slope of this building complex, surrounding sheet surface drainage was used very effectively. Positive drainage from the building masses was designed as part of the building siting. The original intent was to drain from flat roofs through canales to sloped courtyards. At some point, water in the courts found a drop inlet that either tied into a major drainpipe or opened into the parking area. Parking and road surfaces were designed to drain toward Frijoles Creek.

Curbing around the parking controlled the sheet drainage and directed the water to small drop inlets to finally fall into the creek. Minimal underground drainage lines are apparent on the original plans. A major 24-inch trunk line originates at a catch basin at the south end of the diversion ditch and serves as a trunk line for minor tributary lines and for draining surface water from the service area. This line also leads directly into the creek.

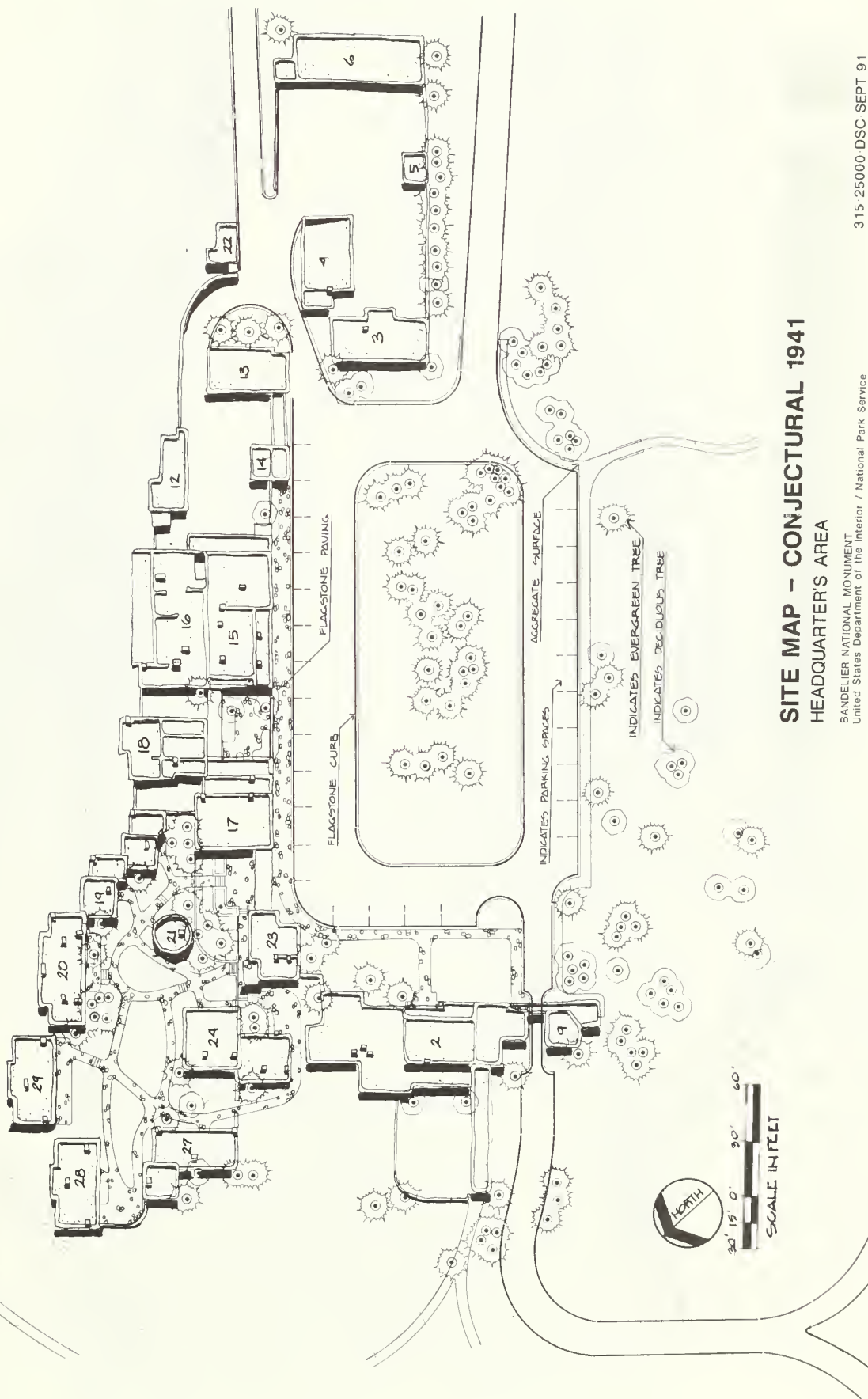


Figure 15. Conjectural site map, 1941.

NOTE

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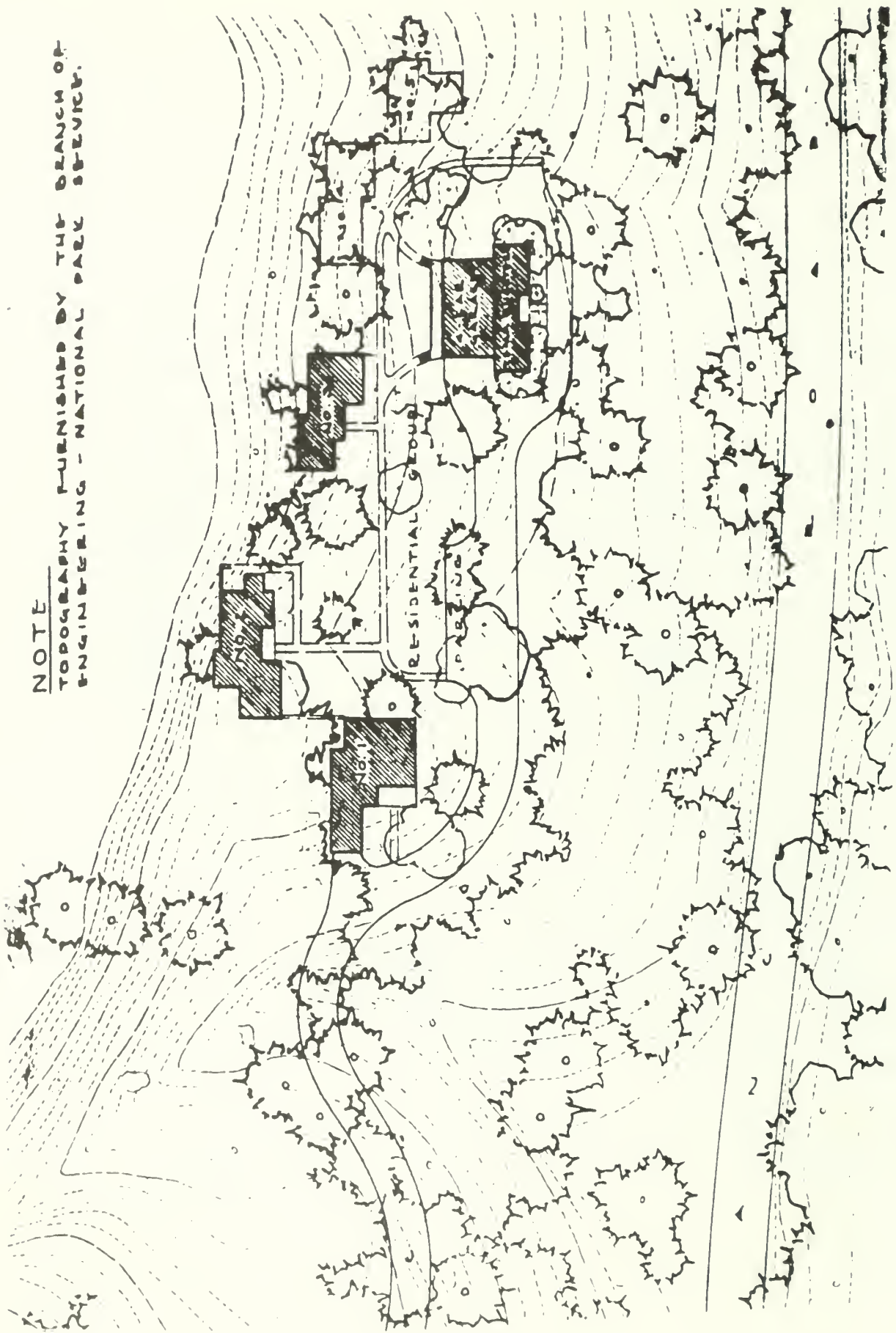


Figure 16. A portion of the 1939 site plan. The entire plan can be found in appendix C.



Figure 17. The 1940 view from the southwest side of the mesa top, showing the entire complex. Note the size and shape of the parking area. Planting in the island is complete.

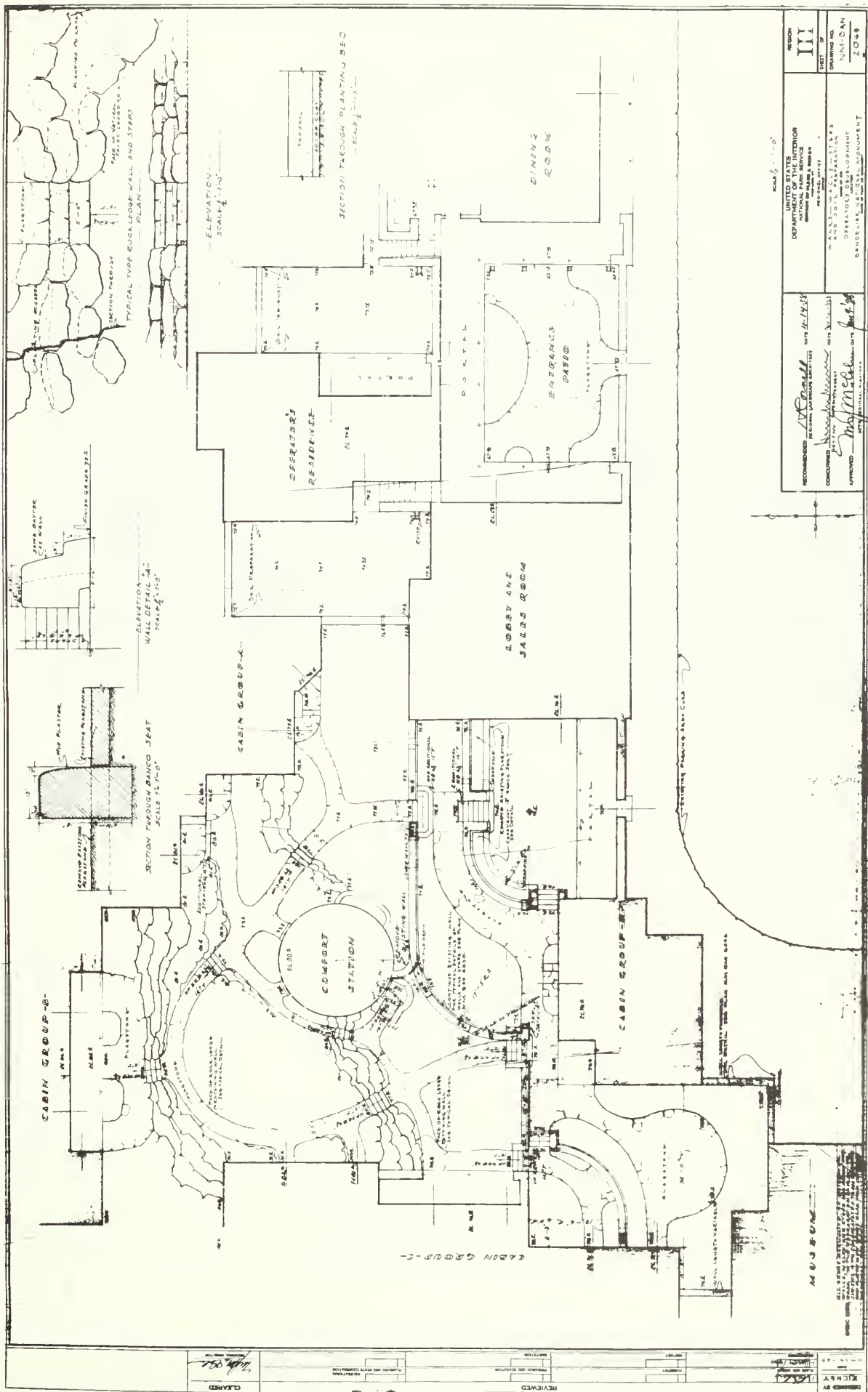


Figure 19. The 1940 plan of the east side of the cabin courtyard (drawing 315/2049, unnumbered). See the step and ledge detail in the upper right corner.



Figure 20. The northeast facade in the 1940s, showing an interesting study in shadows contrasting with the rugged cliff face.



Figure 21. The northeast facade in 1988, showing heavy growth of trees hiding buildings and cliffs.

UTILITIES

Through the years, Bandelier has had a hodgepodge of utility systems to support its needs. Like most small national monuments, Bandelier started out self-sufficient in utilities. The monument was so far removed from developed areas that it originally had its own water, sewer, and electrical systems. The monument staff was required to bring in heating fuels (fuel oil, butane, propane, wood, coal) from outside sources but was able to provide storage space to have enough fuel on hand to warm the buildings through the winter. By the mid-1960s the monument had tapped into the electrical power line, gas line, and water line constructed by the Atomic Energy Commission (AEC) along New Mexico Highway 4 (NM 4) to serve Los Alamos. By tapping into a larger utility operation, the monument lost its self-sufficiency but eased its financial and maintenance burdens and consolidated some of its own systems.

Electrical

Bandelier's electrical service began simply. Diesel generators in Bandelier's powerhouse (B-22) supplied electricity to the canyon development during the 1930s and 1940s. Although the army constructed power lines adjacent to the monument during 1944, the monument did not tie into this larger commercial system until 1948. By 1959, Bandelier was buying power from the larger system and had its own substation with three transformers to convert the large voltages down to residential capacity. At present the monument buys power from the Pan American Company, supplier to Los Alamos Laboratories. Three taps from the power lines along NM 4 feed (1) the upper housing loop and the campground (480 volts), (2) the lower housing loop (13,000 volts), and (3) the fire lookout and the canyon area (13,000 volts).

Water

Bandelier's early water system also was simple. During the 1930s, the CCC constructed a gravity-feed system with an intake diversion from the rito approximately 2 miles above the headquarters area. Two concrete reservoirs – with capacities of 10,000 and 20,000 gallons – held the water until it was piped to headquarters and then distributed to the lodge, quarters, and government facilities.

In 1964, the monument tapped into the AEC's waterline on the north side of NM 4. At present the monument buys its water, like its electricity, from the Pan American Company, supplier to Los Alamos Laboratories. The main tap just off the highway feeds a 35,000-gallon equalizing reservoir. From there, one line drops down to Juniper campground and into the Mesa housing area, and a second line follows the entrance road to the lookout tower, then drops down the canyon wall into the CCC reservoir system.

Natural Gas

The variety of fuels warming the monument's buildings first included coal, wood, liquid propane, and fuel oil. This variety proved frustrating to the monument staff through the years. The lack of consolidated systems, intermittent fuel shortages during World War II, and an inability to buy the fuels in huge bulk quantities caused maintenance and financial headaches. Finally, in 1963, the monument

linked into the AEC's natural gas pipeline with an exposed line down the cliff face. From the AEC's utility corridor along NM 4, the Park Service constructed a natural gas pipeline to the mesa residential area and the vicinity of the fire lookout, where the line drops over the edge of the mesa into the canyon to the headquarters area. Today, the monument buys natural gas from the Pan American Company.

Sewer

Bandelier's early sewage disposal for the canyon consisted primarily of septic tanks. During the past 20 years the system has changed. Now two sewage lagoons serve the Mesa-Juniper area and the canyon area. A lift station with 1 mile of 3-inch force main with a 1-inch return line pumps the sewage out of the canyon for processing. The White Rock housing, Co-op, Tsankawi, and Ponderosa areas all have separate septic systems.

BUILDING COMPONENTS

The CCC buildings at Bandelier were constructed with similar details. To avoid repetition, these details are divided by category and described in this section. Specific building information, which includes deviations from the usual construction techniques and other pertinent data, is described in "The Buildings."

NPS architects and landscape architects made plans and working drawings and wrote specifications for all the CCC projects. The old plans are on file at the monument, at the Southwest Regional Office, and at the DSC and are easily reproducible from microfiche cards. Only selected drawings are reproduced in this study. Some specifications are on file at the park. Others undoubtedly exist in several federal depositories, but the budget and time limit on this project did not allow further research. The specifications that were found included such similar information that seeking out the additional ones would probably add only minor bits of information. As in any construction project, deviations from the original plans and specifications occurred.

Park Service designers worked from a general philosophy that provided guidelines for new construction in park areas. At Bandelier, landscape architect Chuck Richey chose the architectural theme of the pueblo revival style for the monument's development. Indigenous to the area, the style was also undergoing a resurgence in popularity in the Southwest. This mix of Native American and Spanish colonial design elements and construction techniques was perfectly suited to the site. The style had a basic look of having been constructed by native craftsmen using primitive hand tools – one of the precepts of rustic architecture. The rugged stonework, the peeled vigas, and the hand-built furniture created that nostalgic and fitting sense that the designers sought. The style also had the advantage of using on-site and locally available materials – another of the rustic guidelines. The pueblo revival style adapted well to the building site.

The layout around a central parking plaza, the gentle terracing that followed natural landscape contours, and the broken masses of the building forms were traditional elements of the style. All these characteristics of the style accomplished what the agency wanted to do: provide visitor access and facilities in a limited building site and divide the overall development into individual projects that could be constructed for small amounts of money. By following this sensible approach to traditional local architecture, the agency could accomplish its goals with the utmost taste and make the development look as if it belonged there.

Foundations

Excavations and site grading were required for all the foundation work. Specifications for building projects most often called for excavations for footings to be carried down 12 to 18 inches below grade, depending on the project. The specifications also required that "all foundation or footing walls shall be carried down to solid earth as in no case any such masonry be placed on soft earth or fill" (figure 22). Excavated materials were stored in piles next to the building site. Topsoil was used for grading and backfilling, and other excavated materials were "disposed of as directed by the custodian." Thus, archeological fill, if any, was removed and redistributed.³



Figure 22. The specifications for foundation and footing walls called for excavations down to solid earth – usually 1 foot to 1-1/2 feet below grade. In this photograph the foundation for Frijoles Canyon Lodge buildings B-15 and B-16 was under way. (Photo: Bandelier)

Although archeological reconnaissance and ruins stabilization were under way during the period of CCC construction, no evidence of archeological clearance on the proposed building site appeared in the construction records or the custodians' monthly narratives. Considering the awareness of the crew and NPS staff and the relatively constant presence of an archeologist (Paul Reiter and others) working on nearby ruins, it seems likely that anything of archeological importance would have been noted. The records did indicate noteworthy archeological discoveries in other areas of the monument, but they made no mention in connection with construction. The landscape architect was very cautious about his placement of the baseball field, but no similar concerns have been found on the placement of the buildings.

Building foundations varied slightly. Some of the buildings were constructed with stone spread footings; others were constructed with the increased wall batter extending to solid earth as the only foundation. (A batter is a backward or receding slope in the face of a wall as it rises.) In most instances, the footing was built with a small shelf projecting a few inches toward the interior to support an interior floor slab.

Walls

Walls were constructed of Bandelier rhyolite tuff, a volcanically formed rock. Contemporary documents often erroneously referred to the building rock as *tufa*, which is a different stone entirely. (Tufa is a travertine, a form of precipitated limestone.) Most of the tuff was quarried on the Ramon Vigil grant on land that was under the jurisdiction of the Forest Service at the time but that later became part of Bandelier National Monument (figure 23). The CCC had been hoping to leave the quarry in such condition that it could be turned into a stock tank after its work was done; it is not known whether they did so. In 1974, the park staff cleaned up the quarry and built the present amphitheater.⁴ At least one other quarry was used during the early phases of construction – on the Ramon Vigil grant, land adjacent to the monument under the control of the Indian Service. The CCC did an extensive cleanup of that area and obliterated the scars in 1935.⁵

Working the stone took a great deal of time. The CCC men took the rock material in layers and vertical seams and roughly shaped the building stones (figure 24) at the quarry.⁶ They did the final shaping "at the respective building site in the canyon." The project completion report for hauling and transporting the stone from the quarry estimated that they had hauled 7,280 cubic yards of stone for the buildings, walks, and walls, at a materials cost of \$1,577.80, using 47,984 man-days.⁷

Specifications providing the details for wall construction called for stones to be between 6 and 10 inches high, and between 16 and 24 inches long, laid up with strata veins (bedding planes) in a horizontal position. Larger stones were at the bottoms and corners of walls, and they decreased in average size toward the top. The specifications called for stones to be laid true to batter on the exterior and true to plumb on the interior. Wall batter averaged 1 foot 9 inches. The top of the wall was a parapet usually extending 1 foot above the gently sloped roof. Where plans called for stone masonry to meet concrete, such as at a floor slab, the pieces were bonded with the wire reinforcing for the concrete wound into the stone joints and embedded in mortar. Stones were thoroughly wetted before being laid in mortar.⁸



Figure 23. The CCC enrollees quarried rock from the adjacent mesa on the Ramon Vigil grant. They took the rock out of the natural layers and vertical seams. (Photo: Bandelier)



Figure 24. Often the tuff was soft enough that enrollees sawed the rock in chunks. The men roughly shaped the stones at the quarry, and they completed the final shaping of the building stones in the canyon. (Photo: Bandelier)

Although the specifications called for the masonry to be true to batter on the exterior and true to plumb on the interior, Charles Richey wanted the buildings' lines kept fluid. He complained to William Carnes in the Branch of Plans and Design in San Francisco that the lines on the working drawings were so stiff that it was hard for the CCC men to visualize the effect they were striving for. Richey was basically the architect in charge of overseeing the developments in all the Southwestern Monuments, and he had to "depend on an occasional inspection to keep work lined up." He felt that if the drawings were done freehand, the on-site people would understand better how the desired end product should look. The San Francisco office denied his request because it introduced "a likely chance of possible error due to the fact that T-Squares and triangles are still the proper tools to use when it is necessary to make clear detail drawings."⁹ Despite Richey's concern in the early stages, he was pleased with the final results. The construction foreman managed to understand the architectural intent and incorporate its subtlety into the finished product.

The specifications required three types of mortar. The first was a cement-lime-sand mortar (1:1:6 mix) used for stonework below grade, around eight viga ends, around windows, doors, and parapets, and as capping.¹⁰ Pojuaque mud mortar was sometimes used in main wall sections in a mix of "Pojuaque soil, sand and water in proportions approved by the custodian."¹¹ This Pojuaque soil was a clay taken from borrow pits somewhere in the monument, or possibly on adjacent federal lands as designated by the custodian. A third type was a cement mortar with "one part cement and three parts of fine aggregates and with an addition of 10% lime to volume of cement used." All masonry was pointed flush with the face of the stone.¹²

The drawings called for an exterior finish of "pojuaque mud plaster put over stone." Landscape architect Charles Richey clarified that "we are not using outside mud plaster but simply striking the mud joints flush and going over the exterior with a wet broom." This wet broom coat over the stone was intended to give "a texture of mud and stone." Mrs. Frey pointed out that the maintenance of that mud plaster would be both expensive and annoying, and Hugh Miller, assistant superintendent for Southwestern Monuments at the time, recommended using brown stain on the porous rock to achieve the desired effect. Charles Richey replied that that was not an acceptable solution: "Mr. Richey's attitude was that it was not intended to remud the buildings annually but simply permit weather to wash down the first coat (figures 25 and 26), leaving an appearance resembling that of weathered adobe walls."¹³

Some misunderstanding about and complications with the mud plaster continued. The portals had been finished with the mud plaster. Partial exposure to weather had made their appearance somewhat messy and made some of the built-in benches less useful than they could have been.

In 1941, the maintenance crew removed the mud plaster from the portals and replaced it with a "cement mortar." That year the crew also knocked the remaining mud plaster off the residences and replaced it with "a hard lime plaster."¹⁴ Any combination of these exterior finishes may be found today.

Most interior walls were constructed of tuff, averaging 9 inches in thickness, finished with gypsum plaster and painted. Most plumbing walls were built of clay tile block, also plastered and painted. Interior bathrooms had cement plastered walls and ceilings. A few interior partitions added in recent years were of wood framing and Sheetrock, plastered and painted to match existing fabric.



Figure 25. The entrance gate to Frijoles Canyon Lodge had the exterior wall treatment that the designers hoped to achieve. Landscape architect Charles Richey noted: "We are not using outside mud plaster but simply striking the mud joints flush and going over the exterior with a wet broom." He did not intend to remud the buildings annually but "simply permit weather to wash down the first coat, leaving an appearance resembling that of weathered adobe walls." (Photo: Bandelier)



Figure 26. In this photograph the plaster on the employee dormitory (B-16) had begun to weather. (Photo: Bandelier)

Roofs

Wood for the roof structures was obtained nearby. The forestry crew of the CCC spent a month during the fall of 1935 cutting and hauling wood into the canyon. They removed from Sawyer Mesa (Forest Service land) 51,150 lineal feet of snow-damaged aspen, which they brought down into the canyon, peeled, split, and piled to season for ceiling material. The SCS happened to be conducting a timber stand improvement project on the adjacent Ramon Vigil grant, and the CCC forestry crew did "them the service of cutting and removing mistle-toe-infected" ponderosa pine.¹⁵ They hauled this into the canyon for peeling, seasoning, and eventual shaping into vigas and lintels. Timber for buildings constructed during the CCC's later years was also acquired from Forest Service lands.¹⁶

The timber preparation process did not always follow outlined procedures. Although specifications called for peeling the logs and allowing them to season on the timbering site "as long a period of time as possible"¹⁷ before moving them into the canyon and using them in construction, the practice seems to have been to cut and haul, and then peel and season. In 1939, the forestry crew brought unpeeled timbers for construction into the canyon. The timbers were infested with unspecified bugs (perhaps pine beetles) that killed most of the landscape project's newly planted piñon and yellow pine trees.¹⁸ It is not known if the use of distressed materials – timber downed by snow damage, or host to mistletoe and insect infestation – had any bearing on subsequent decay.

The roof construction reflects typical southwestern architecture and its evolution from early timber-and-earth roof construction techniques. A primary system of peeled logs – vigas – provides the structural system with a secondary system of smaller saplings or split boards overhead (latias); if split, these latias are called rajas. Latias traditionally served as the base for grass or reeds that held the earth roofing above, but at Bandelier they are part of the overall architectural design and ambiance.

Most of the vigas were ponderosa pine, but the specifications did allow for use of fir. Trees were to be free from large knots and imperfections that might possibly impair strength and durability. The winter-felled vigas averaged between 8 and 10 inches in diameter and were usually laid between 2 feet 6 inches and 2 feet 9 inches on center after being placed in position with the crown edge (camber) up (figure 27). The logs were required to have a 12-inch bearing on the masonry wall. Vigas extending through the wall frequently were wrapped with a caulking of three strands of 1-inch-diameter rope oakum approximately 4 inches from the wall and then set in a cement grout (one part cement to three parts sand) or the cement mortar mentioned earlier. Many extended through and beyond the wall, but most of the exposed vigas were merely stubs. Vigas that had no extension were embedded within the wall. On vigas that extended over a portal, a 3/4-inch x 24-inch galvanized iron chisel-pointed spike pinned the viga to the adzed wood lintel. Exposed vigas, both interior and exterior, were axe cut with three or more bevel faces. The logs were laid level in most buildings, and saddle-coped over adzed beams. The tops of the vigas were sawn or adzed flat (figure 28) to accept latias or sheathing.¹⁹

Most of the ceilings in the buildings were the exposed vigas and latias. The bathrooms in the lodge cabins were built with covered plaster ceilings – small barrel-vault-shaped plaster spans between the vigas. In maintenance-oriented buildings, many of the ceilings are the exposed roof sheathing.



Figure 27. The CCC enrollees hoisted the vigas into place with the camber edge facing up. Chisel-pointed, galvanized iron spikes pinned these portal vigas to the wood beams. (Photo: Bandelier)



Figure 28. The CCC workers adzed the vigas flat to accept latias or to use as lintels or beams. In 1988, adz marks remained visible on most lintels and beams. (Photo: Bandelier)

Latias were either half-round (usually laid in a herringbone pattern) or split aspen, laid perpendicular to the vigas. Rafters 2" x 6" or 2" x 4" were laid above the vigas supporting 1" x 6" sheathing, often vented with screened vents built into the masonry walls. The original roof finish was usually a 3-ply composition roof (15-pound base felt and 30-pound finishing felts), attached with 7/8-inch galvanized, barbed roofing nails through flat-tinned disks. Asphalt between the roofing layers was 100 percent coverage at 25 pounds per 100 square feet. The final asphalt coat had a coverage of not less than 45 pounds, embedded with 300 pounds of gravel per 100 square feet. Flashing was usually 26-gauge galvanized sheet metal.²⁰

The roofs were drained by hewn and routed log canales (drain spouts) that were lined with 26-gauge metal scuppers. The canales extended through the parapet and well beyond the walls to ensure that runoff would be carried away from the building. In a few instances where projecting vigas and canales intersected, the canale was notched to rest on top of the viga.²¹

In 1980, the composition roofs were replaced with a sprayed membrane roof coating. Most of the existing roofing material was removed, and a 4-inch layer of polyurethane foam was sprayed on primed sheathing. The polyurethane foam in turn was covered with a tinted urethane coating over the roof and parapets.

Floors

Many of the buildings were constructed with flagstone floors, as "dictated by the necessity of keeping construction costs within the \$1,500 statutory limitations." The irregularities in the floor stones, up to 3/4 inch in some cases, were made uniformly smooth by grinding down the 3- to 6-inch stones with a 6-inch portable grinder.²² The flagstone floors were laid over a 4-inch-thick concrete slab on a cement leveling bed or, in some instances, on well-wetted, puddled and tamped earth fill.²³ Original floor finishes included Bruce Floor Finish – a penetrating oil – and high-gloss varnish. Floors in heavy traffic areas, originally finished with a high-gloss varnish, were later coated with a dull, nonslippery hard traffic wax finish, for more consistent looks and safety reasons.²⁴

Other floors (some closets, hallways, and maintenance and service rooms) were brushed finished concrete, sometimes painted. Concrete floors in lodge bathrooms were covered with medium brown linoleum tiles.²⁵ A few floors, in residences B-18 and B-32 and in the original administrative office (part of B-2) were constructed of wood. These tongue-and-groove wood floors received a varnish coat, but it is not known if this was the original finish.²⁶

Windows and Doors

Specifications called for door and window frames to be made of grade 0 or better Douglas fir and ponderosa pine. Window sashes were made of white, sugar, or ponderosa pine. Casements usually had six lights (secondary facades had four) and 20-gauge galvanized iron metal drips on lower edges. Casements were 1-3/8 inches thick and usually paired, but sometimes set flanking both sides of a fixed

sash that had an equal number of lights. The exterior sill was stone, several inches thick and splayed to shed water. The interior sill was usually flat and finished Keene's cement with a bull-nosed edge. Lintels were usually three timbers of varying dimensions – one exterior 4" x 4" and two 6" x 8"s, for instance – set in stone masonry. Thirty-pound felt separated the timbers from the stone masonry. The exterior lintel was usually adzed on its exposed surface. Screens were built for some of the windows. These were built of appropriately sized kiln-dried lumber, assembled with mortise-and-tenon joints, glued, and pegged. Screen cloth was 16-mesh, 32-gauge bronze cloth held with wood strips.²⁷ Screen frames were hung from hangers at the top of the wood frame.²⁸ Some multilight fixed-sash and hinged-sash windows were also placed in the buildings. Curtain rods, where they existed, were birch or other hardwood dowels set on 4-inch square-end screw hooks embedded in the wood lintels.²⁹

Doors were of two basic types. The first usually had three layers of V-jointed tongue-and-groove wood, held together by three horizontal hardwood splines. The second type was a mortise-and-tenon wood door with inset panels. Either type of door could have glazing. The former sometimes had a single light, which could be covered with band-sawn grillwork. Paired multilight French doors with side-light panels were built in the main entrance to the museum and visitor center.³⁰

Fireplaces

Fireplaces were designed as a main source of space heating for most of the buildings. These corner fireplaces (figure 29), now called *kiva* fireplaces, were built of tuff and firebrick. In areas where no natural corner occurred, a narrow buttress wall – a *paredcito* – was built to form the required corner. Walls and floors of the fireboxes were lined with firebrick laid in a fire-clay mortar with 1/8-inch flush joints, with every third brick in each course bonded into the stonework. Arched openings, constructed over wood centering, were parabolic or flat arched in shape and were also constructed of firebrick with alternating headers and stretchers to bond into the adjacent masonry. The entire length of the chimney was lined with a fire-clay flue, which protruded 4 inches above the exterior stonework at the top. The hearths were concrete, usually several inches high. The concrete was composed of one part cement colored with mineral colors, two parts fine aggregate, and four parts coarse aggregate, and laid monolithic.³¹ Many of the fireplaces had "Heatilator"-type registers, which heated the air as it passed through the fireplace and let it out in the same or an adjacent room.

Although the fireplaces were the principal heating source for the buildings, the cabin units also contained other heating sources. Interior common walls, such as the wall between B-27A and B-27B, held flues and flue cleanouts for wood stoves to heat areas too far removed from the main fireplaces.

Wood Finishes

Conflicting information turned up on finishes and colors for woodwork. Exterior exposed wood was treated with two coats of asphalt stain and bleaching oil.³² In 1941, exterior paint for the lodge units for doors, sashes, and frames specified a sand beige, oyster gray, or an in-between color "to

approximate weathered wood." The primer was aluminum house paint, and the main color was put on in two coats having either a white lead or lead and zinc base.³³

Oral tradition holds that the original colors for the exterior woodwork were very bright, and some documentation may support this belief. A discussion on colors turned up in some 1939 correspondence. Project Superintendent Hub Chase was complaining to Boss Pinkley that Lyle Bennett, architect of most of the buildings, had created a problem by choosing paints of German origin. When the materials arrived to be mixed in the field, the crew had to go to Santa Fe to get the instructions translated, and even then, "green" could be translated as "pea green," "blue green," or "lime green." Chase also saw procurement of materials from Germany as a problem because of the "strained relations" at the time. Pinkley recommended acquiring American materials and approximating the colors. The final agreement with Lyle Bennett was to reduce the intensity of the colors but maintain their general values. The tone of the letters seems to indicate that these colors were for the exterior woodwork, but they do not specify. An inspection of recently completed exterior painting in 1939 noted that the work was satisfactory, "although the warmer colors could be reduced in intensity to advantage."³⁴ This statement, too, supports the theory about bright colors.

The first finish used on exposed interior wood (sashes, doors, and frames) was a spar varnish primer over stain. By 1941, the recommended finish had changed to two coats of white shellac in a 2-1/2-pound cut. To obtain the 2-1/2 cut, they started with the standard 4-pound cut of white or bleached shellac and diluted each gallon with 3-1/2 pints of alcohol. The second coat was rubbed dull with fine steel wool and covered with one coat of paste wax. The paste wax was hand rubbed, and then the gloss was removed by wiping with a damp cloth.³⁵ Some of the interior woodwork, particularly carved details, was painted. Most large plaster wall surfaces were white, with painted details such as wainscots.

Furnishings and Lighting Fixtures

Completing the thorough design of the buildings were the furniture and light fixtures. CCC craftsmen created the pieces from designs prepared by Park Service architects and landscape architects.

Furniture included chairs, dining tables, coffee tables, wood boxes, beds, display cabinets, trasteros (dish cupboards), sofas, dressers, a lunch counter, counter stools, chests of drawers, curtain rods, mirrors, and bedside lamps (figures 30-34). All were built with mortise joints held by pegs. Screws were used only when necessary – such as for attaching a tabletop to its legs. Edges were sanded smooth and rounded. Each piece had hand-carved decorative design of Southwest Indian or Spanish colonial design. Most of the carving was painted.³⁶ Finish and paint specifications were written on hand-colored prints approved in the field. Because paints and stains were mixed in the field, written documentation on them proved scarce, other than a trip report in which Lyle Bennett and Mrs. Frey agreed that considerable color would be worked into finishes and furnishings in the lodge and that warm colors would predominate.³⁷ Drawings for some of the chairs in the lodge, for example, call for a seat made of woven rawhide "strips of contrasting colors."³⁸ Furniture for the lodge (figures 35-37) was built so that it was interchangeable in all of the cabins.³⁹



Figure 29. Custom-made furnishings in the lodge lobby surrounded the warming corner or "kiva" fireplace. The chandelier and the painting scheme echoed the development's Spanish colonial design theme. (Photo: Bandelier)



Figure 30. In 1940, Navajo blankets thrown over the couches in the lodge lobby gave the interior a colorful southwestern air. (Photo: Bandelier)



Figure 31. The lunchroom in Frijoles Canyon Lodge (B-15) carried out the same southwestern theme. Although the lunchroom's layout was typical of the period, its design elements were unique to Bandelier. (Photo: Bandelier)

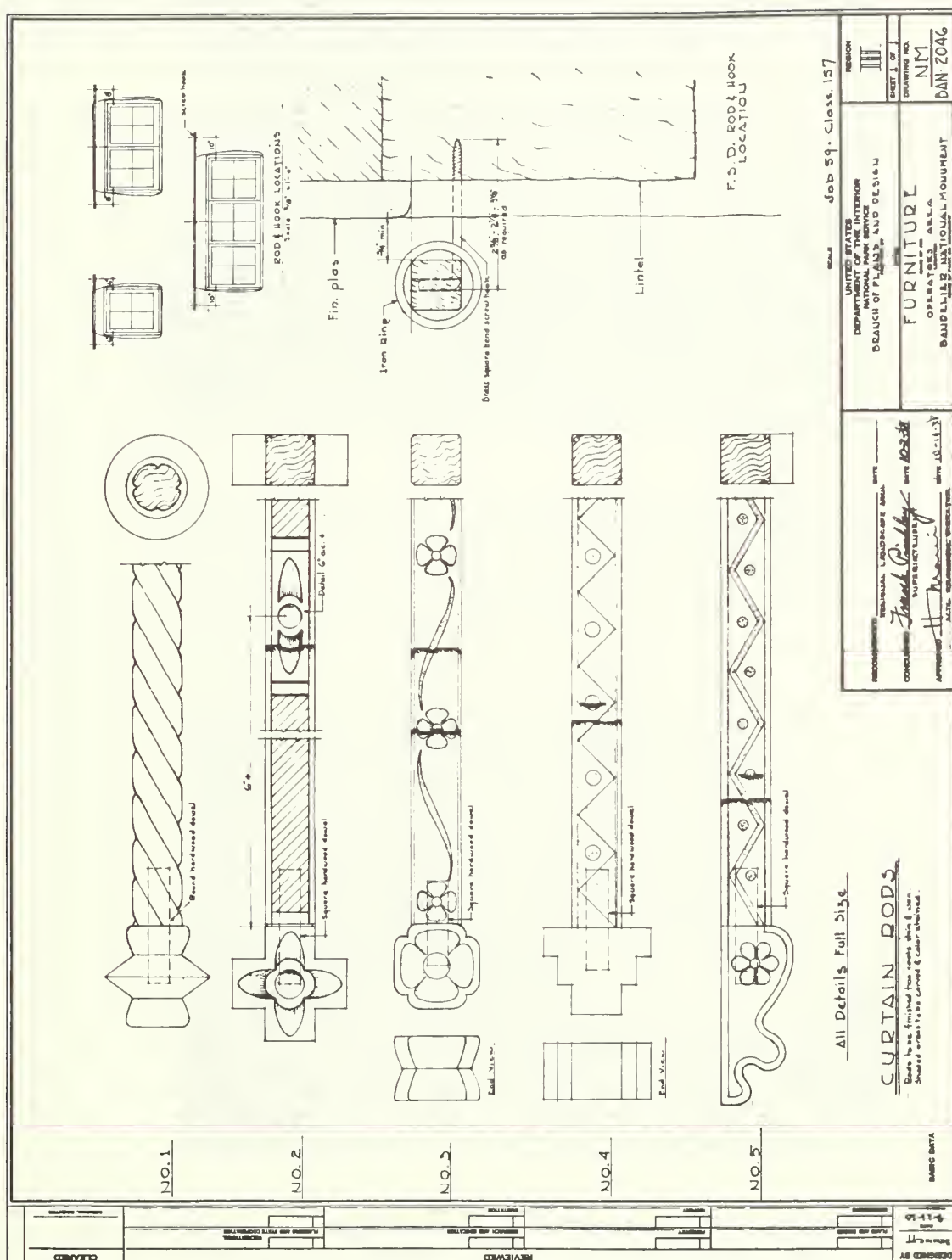


Figure 34. Drawing for curtain rods (drawing 315/2046, sheet 1).



Figure 35. Furnishings for lodge unit, circa 1940. Note Spanish colonial and Native American floral designs on chest of drawers and armchair.



Figure 36. The combination of the Spanish colonial and Native American design motifs provided a sense of place unique to Bandelier. (Photo: Bandelier)



Figure 37. In 1940 the tabletops and chair seats in the lodge dining room had a glossy finish. Although the designers originally called for flat finishes on these surfaces, an auditor from Washington recommended the shiny tops to give customers "an immediate idea of immaculate sanitation." (Photo: Bandelier)

Furniture was stained and then finished with Bruce Floor Finish, a penetrating oil, to protect against staining and moisture. The original finish was supposed to be a "varnish type penetrating oil," but the Bruce Floor Finish accomplished the same end result of a flat finish and was considerably cheaper. Legs of tables and chairs were finished with "stain containing a small amount of linseed oil." The intent in using all of those materials was to keep the finish as flat as possible.⁴⁰ When the chief auditor came in from Washington to inspect the Bandelier CCC projects, he "felt that it was important in hotel psychology to have bright shiny table tops which, when wiped clean by a waitress, would give the customer an immediate idea of immaculate sanitation. He felt that the seats of the dining room chairs should have a glossy finish." The tabletops and dining room chair seats were refinished accordingly⁴¹ – with a high-gloss varnish (figure 31).

All the light fixtures for the buildings – interior and exterior – were of Spanish colonial design (figures 38-44). The drawings for the soldered tin light fixtures and mirror frames went into considerably more detail on color. Perhaps the only bits of information missing from these drawings were the gauge of tin and type of paint used. The usual procedure on making these pieces was to cut the tin, then scratch and dot it as specified in the design, form the piece, and solder the components into place. Then it was painted. Paint colors on the plan for a light fixture included ultramarine blue, chromium yellow, burnt sienna, rose madder, and yellow ochre.⁴² Door latches and hardware were made with the same care (see figures 45 and 46), but no written information was found on them.

By the end of the furniture project, which included construction of both furniture and light fixtures, the park had spent \$2,997.79 on materials and used 4,402 workdays.⁴³ The quality of the work was excellent. The park's wood shop was so good that it was entrusted with carving the massive doors for the new museum at Tumacacori.⁴⁴ A December 1942 inventory recorded more than 500 pieces of furniture – the results of a very prolific venture for a group of hardworking young men.⁴⁵

Built-in and Chronic Problems

The CCC buildings at Bandelier were plagued with a series of recurrent problems. Their histories are summarized here, by topic. Information on existing conditions, current problems, and recommendations for treatment are presented in section 4.

Roofs. The roofs at Bandelier were always a problem. The first mention of roof work came in 1938. The freeze-thaw cycle of snow on the roofs of the residences made patching necessary around canals, where the wood had shrunk and allowed water to seep in.⁴⁶ By 1942, the maintenance staff had considerable patching to do on the operator's residence (B-18) and other unspecified buildings. They used a "new type roofing compound" that seemed to work well, and they hoped that somewhere they could find \$1,200 to do all the buildings in the development.⁴⁷ The money must have come through, because they were able to waterproof all of the roofs by November, but some were in such bad shape that the staff did not think they would last long without total roof replacement.⁴⁸

Winter of 1943 was not much better for the roofs. Despite the efforts of the staff to shovel the snow off the roofs and properly de-ice the canals, the custodian wrote, "Floods of water poured into several buildings. Our roofs are quite picturesque, but that's about as far as they go."⁴⁹ During the spring of 1944, staff climbed up on the roofs during every bit of warm weather and continued their "never-ending" patching.⁵⁰



Figure 38



Figure 39



Figure 40



Figure 41

CCC-built light fixture of Spanish colonial design. (Photos: Copeland for NPS)



Figure 42



Figure 43



Figure 44

Spanish colonial light fixtures built by the CCC. (Photos: Copeland for NPS)

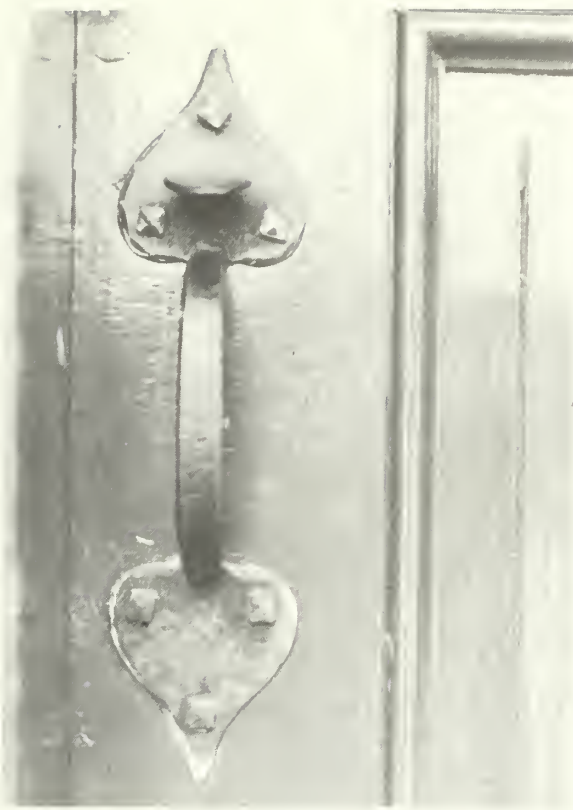


Figure 45



Figure 46

CCC-built door hardware. (Photos: Copeland for NPS)

This cycle continued through the years. Citing all the minute repairs and reroofing jobs would take up several boring pages of redundant data, so a summary is given here. Blisters were cut out and repaired. When allotments came through for partial or total reroofing of the buildings, the usual method was to reroof the structures with materials similar to the original. As far as the records show, only a few changes were made. In 1944, canales were coated with asbestos cement.⁵¹ Some type of "bonded roofs" was installed on some of the buildings in 1951, but these proved unsuccessful in 1952 because of water leaking underneath the roofing.⁵² In 1980, the polyurethane foam roofing was installed; its problems are dealt with in section 4. The roofs have been the focus of continual repair since construction. Despite the best efforts of the monument staff, the leaks continued. One frustrated custodian summed it up by saying, "Leaks occurred almost impartially in the roofs we have treated and in those not treated."

Vigas and Canales. By 1941, cracked and shrunken vigas were a problem in the buildings. Although the forestry crew tried to make certain that all vigas were seasoned before use, the fast-paced construction may not always have permitted enough seasoning. Architect Lyle Bennett was called in to make recommendations on treating cracks in the exterior portions of the viga ends.

His system was to fill the cracks with a light gray, permanently elastic, nonstaining caulking compound to prevent water from seeping in and causing rot. If some decay was already evident, he recommended pouring zinc chloride dissolved in water (no proportions given) into the cracks to kill fungi, letting the viga dry, and then caulking it.⁵³ This system did not work adequately – possibly because it was not implemented in all cases, or possibly because the materials did not react favorably. By 1946, the park staff was replacing decayed viga ends. Their new method was to cut away all decayed material from the viga end until they reached sound material. They coated the end of the log with wood preservative Permatox A, sealed it with roofing compound, treated the new projecting stub with the preservative and roofing compound, and then cemented it into place.⁵⁴ Many of the remaining viga ends are these stubs, replaced through the years.

Rotting canales were also a problem. The park staff replaced six of them in 1953, but the custodian did not write down any details on the construction of the replacements.⁵⁵ No further written documentation was found on this point.

Utilities. Two problems of improper design of the utility systems recurred through the years. The first was the placement of pipes and wiring in stone and concrete, making repair extremely difficult (figure 47). In 1943, a sewer line became clogged in B-20, between cabins 7 and 8, so the cement floor was broken up and the line under the cabins was dug up and repaired. The floor had to be replaced.⁵⁶ This same line had to be dug out again 10 years later "to remove accumulated roots."⁵⁷ The hot-water line to the bathroom of B-8 burst in 1945, and a considerable amount of stone and concrete had to be removed before the leak was finally found and repaired.⁵⁸ Similar problems were experienced with electrical lines embedded in concrete, particularly in the visitor center.

The second problem arose with fuels; there was too great an assortment. Hugh Miller felt that the problem developed out of the nature of the CCC work. No one knew how long the program would last, or at what stage construction would be cut off. Also, funds were extremely limited. He felt that the whole matter had been handled ineptly, but that the blame really belonged with the process of the development and not necessarily with the designers.⁵⁹ Custodian Chester A. Thomas complained that the operation of the physical plant was not efficient and summarized the fuels he used:



Figure 47. Waterlines embedded in stone channel during construction. (Photo: Bandelier)

wood – used for space heating in residences and for cooking . . . propane – operation of refrigerators in residences and for cooking in residence #1. Used for water heating in residences . . . fuel oil – used for heating office building and proposed for museum lobby and comfort stations . . . coal – used to heat water in laundry room and in shower rooms in campground . . . butane – for use in proposed lookout . . . gasoline – used in power plant and for lights in residences in emergency.

He recommended consolidating fuels to one or two types so that the monument staff could buy in sufficient quantity to get reasonable prices.⁶⁰ The situation did improve somewhat over the years. Existing conditions are summarized in section 4.

Aesthetics. Concern with the visual appearance of the structures was a high priority from the time of construction. When the monument staff proposed placing permanent fire equipment around the structures in 1940, the regional office insisted on helping select the locations that would not detract from the appearance of the buildings.⁶¹ Although the relatively simple design of the buildings has made them hardy enough to withstand a series of incompatible changes through the years, concern with their visual character waned during the past two decades in favor of more practical solutions to everyday problems. The original windows in most of the residences, for instance, were replaced with single-light thermal pane windows. This change from the multilight casements had a detrimental visual effect on the buildings' exterior character. In recent years a heightened concern with the buildings' visual appearance has arisen. The area's status as a national historic landmark should further ameliorate the situation.

THE BUILDINGS

The level of information revealed by research on each structure varied tremendously. Considerable correspondence, for example, appeared on the museum construction, but very little turned up on the custodian's residence. The buildings are not described in detail – that is done on the List of Classified Structures (LCS) inventory, available at the monument or the Southwest Regional Office. Rather, this section updates what was included on the LCS and presents other data relevant to the project.

B-1, Comfort Station

The building (figures 48 and 49) was originally constructed as the comfort station to serve the old campground in the canyon. When the campground was phased out, the showers and laundry facilities were removed, but the building continued to be used as the comfort station for the picnic and day use area.

Construction on the building started in 1934 and ended in March 1935. The walls had cement mortar, and then the joints were raked back 1-1/2 inches and pointed "with local mud" – undoubtedly the Pojuaque mud mortar. The service room in this building originally had a coal or wood heater and hot-water tank for the showers.⁶² At least one larger, oil-burning heater was added in 1940-41.⁶³ Although the schedule varied with funding, the concrete floors were usually painted every six years. In 1953 the two main rooms of this building received asphalt tiles.⁶⁴ The maintenance staff closed this building during the winters and drained the pipes.⁶⁵

The building was partially banked into a hillside, and proper drainage of roof and groundwater was a problem. In April 1944, a "seep into the building" caused water damage in which much of the interior plaster fell off. The plaster was replaced and painted at that time, and some of the exterior walls were given an "asphaltic treatment" to prevent a recurrence.⁶⁶ At some point, a concrete block retaining wall was added behind the structure to divert roof and ground runoff away from the building. Also at an unknown time, the rear wall parapets and the front elevation vigas were removed. No written information on the modifications appeared in the records.

A pumice block partition installed in the men's shower in 1959 was treated with liquid tile. The women's shower, too, received the treatment. Then both were painted with Intertol, a mildew-resistant paint. A new shower head and valves were installed in the men's comfort station, and the custodian complained that they had to chip through a concrete wall to get to the plumbing (figure 50).⁶⁷ In the early 1960s the monument staff removed the showers in the men's and women's sections. They installed an additional bank urinal in the men's section and a water closet in the women's section. The concrete floors received ceramic tile at the same time.

The building received additional work of a basic maintenance nature – painting, re-roofing, replacement of vandalized towel dispensers, replacement of screens, and the like. Most of the information in the records was not specific about materials and colors, with one exception. In 1967, the monument staff painted the doors and windows "Santa Fe Blue."⁶⁸ Without an original painting schedule for the building or an analysis of paint samples, there is no way to determine if this was replacement of original color that had continued through the years, or just an aberration.

B-1 was the first building the CCC constructed at Bandelier. The stonework on this building was not as refined as on the others, both because of the architect's intent and because of the newness of the CCC's skills. Jared B. Morse, who was the resident landscape architect at the time, designed the building.

Morse remained on site during the construction of the building, and Project Superintendent Hub Chase noted that although the building was small, "it shows our quality and style of work and Architect Morse has continually appeared pleased and satisfied and at no times offered any criticism."⁶⁹ Chase's comment, then, indicated that the architect intended to use the rough stonework for effect. The successful completion of this simple building led to the approval to proceed with the rest of the building program in Frijoles Canyon.⁷⁰

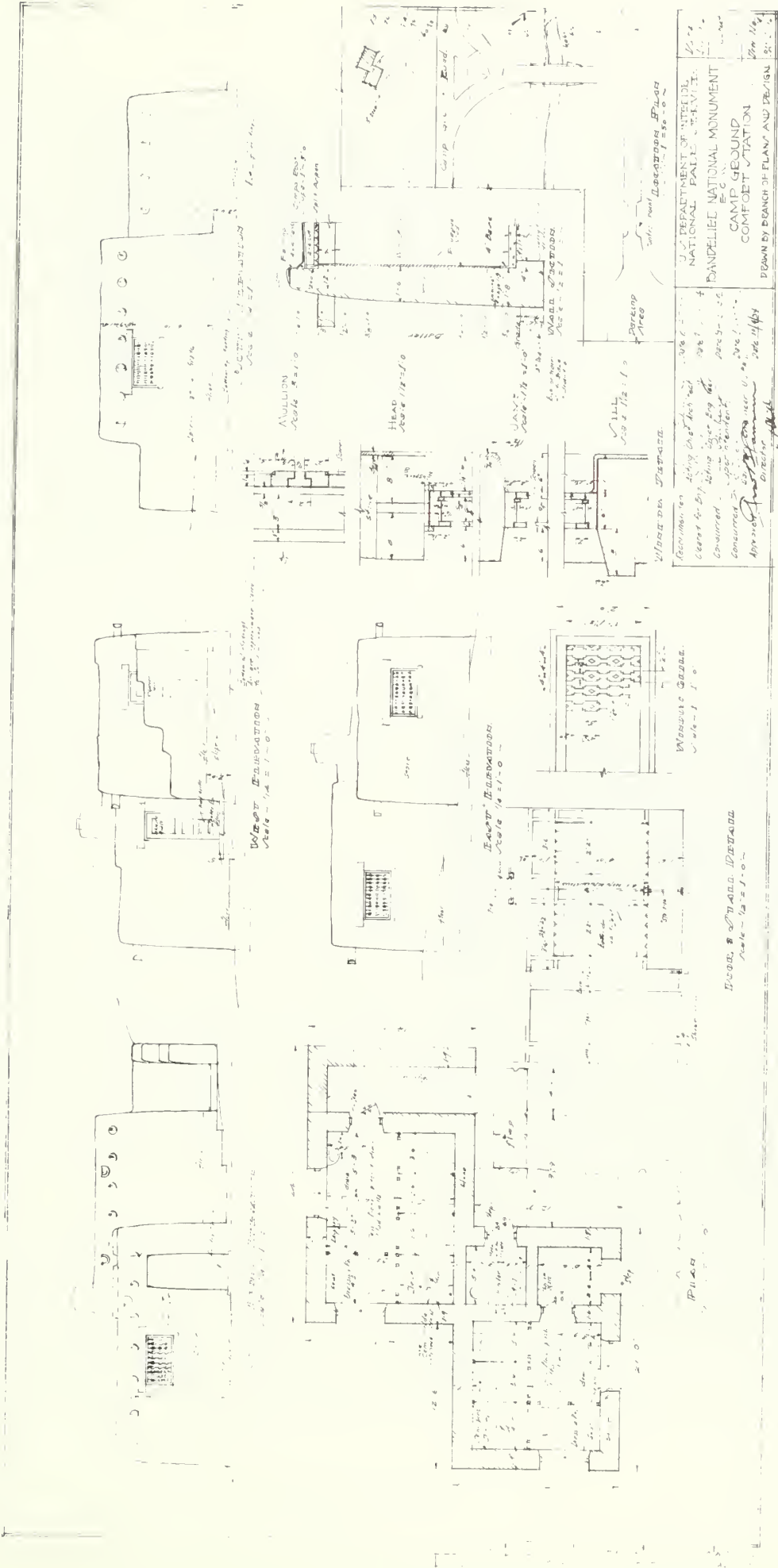


Figure 48. Plans for campground comfort station (B-1), 1934 (drawing 315/3006, sheet 1). Project Superintendent Hub Chase was quite pleased with his crew's quality and style of work on this building. The completion of the simple structure led to the approval to proceed with the rest of the Bandelier building program. Everyone was convinced that the CCC had the capabilities.



Figure 49. Comfort station, B-1. Note the somewhat rough stonework.
(Photo: Harrison for NPS)



Figure 50. Interior view of men's side, B-1.
(Photo: Copeland for NPS)

B-2, Visitor Center

Originally, two structures comprised this building: the headquarters office and the museum, connected by an open portal (figures 51-53 and 56). The CCC men constructed the office building first, in April through May 1935, and the museum in 1936. In 1939-40 they enclosed and expanded the space behind the portal and between the two buildings connecting the buildings and creating a large lobby (figures 54-55 and 57). The lobby addition included the construction of portals and a rear patio that was to feature an "ethnobotanical garden, with those native plants also serving the purpose of landscaping."⁷¹ Landscape architect Charles Richey designed a similar interpretive garden for the patio of the new museum at Tumacacori. Although the designer intended to have a garden here, no documentation has been found showing its implementation.

The headquarters office building had three spaces. The principal clerical room had a reinforced concrete basement, and the two side rooms had reinforced concrete slabs. The basement had an exterior, open stairway with two large lightwells. The material excavated for this foundation placement was a soft tuff silt. "Tuff rock in cement mortar" was used in other footings, and this masonry extended 2 feet above ground line. Pojuaque mud mortar was used in the walls to ceiling height.⁷² Above that cement, mortar bound the parapet. Floors in this building were tongue-and-groove boards, which were varnished and waxed.

The building has undergone a number of changes. A mud plaster originally coated the interior walls of the offices. In February 1949, a "hard plaster that will be much more durable" replaced the mud.⁷³ An oil heater was installed in the basement of this building in 1938 to augment the fireplace.⁷⁴ A gas furnace was installed in 1968, but the records do not indicate if this replaced another gas furnace, or the oil system. A wood-and-glass partition was built to enclose a separate office for the custodian in 1940. This entire section changed again in 1969, when it was converted into the audiovisual room.⁷⁵

Building details were not always finalized before construction, and the museum was an extreme case. In 1936 the walls already stood at viga height before the various NPS offices agreed on paper not to have windows in the structure. Windows had been included on an early drawing.⁷⁶ Boss Pinkley fought to have skylights put in the building to illuminate the exhibits, but the architects turned down his repeated requests. In their view, "skylights . . . as you know, are not appropriate with this architectural style." The architects argued that, besides being inappropriate, the skylights would look bad from some of the trails above and they would be too expensive to install. Also, they felt that the skylights would cause problems with roof drainage and not fit properly into the type of roof construction in the building. Consequently, Pinkley agreed to leave the skylights out under the condition that the architects leave out the window, allowing for more exhibit space.⁷⁷ Although the building was completed in 1936, visitors did not begin using all three rooms until 1939, when the exhibits were completed.⁷⁸

The museum building had three rooms and was constructed so that it could be opened for short periods of time and then closed quickly. Because it was expected to receive little use during the winter, the building had no central heating system. The Branch of Plans and Design wrote to the park in 1936, saying that it would be glad to oblige the park and design one when the time came. The only heat source for the building was a corner fireplace in the entrance lobby. The custodian was concerned with this problem and noted: "The cold, clammy atmosphere of the museum was rather a handicap. The visitors would step in and look around, give a little shiver and leave the museum attendant talking to

himself. On the other hand, in the summer time, they seek the cool retreat of the museum building after a trip along the cliff houses with the sun bearing down."⁷⁹ In 1950, the museum still had no heat, and the custodian noted that the need had been accentuated with increased visitation the monument was receiving. Finally, in 1954, central heating was installed in the museum. A new room was constructed at that time to house the oil furnace. The heating system was changed to a ducted natural gas furnace in the 1960s.

Through the years additional changes occurred. The museum roof was insulated in 1939. "Class A light weight" 2-inch insulation with waterproof backing was placed between the ceiling joists and either cleated or stripped to the joists.⁸⁰ Storm windows installed in 1959 replaced "the screens used during the summer months."⁸¹ The portal behind the museum lobby was damaged by water and replastered and painted in April 1950.⁸² The museum's stone floors were stained and varnished in 1953, after more than 15 years with no treatment.⁸³

The portal between the museum and the office building was originally open so that vehicles could drive through to a small parking lot. This opening was closed in 1938. At that time a large drinking fountain was constructed in the open space and a flagpole was placed in front of the buildings.⁸⁴ When the addition linking the two buildings was built in 1939-40, the water fountain was removed. A second road, between the administrative offices and comfort station B-9, was the access to the campground and Mrs. Frey's old lodge.

The large lobby built in 1939-40 was not designed to be a mere enclosure of a formerly open space. Ansel Hall and his assistants in the Park Service's Field Education and Forestry group operating out of the University of California at Berkeley commented on all architectural drawings for museums. Dale King, who commented on the proposal for the Bandelier lobby, wanted the new room large enough to accommodate 100 persons in folding chairs, with a recessed screen for movies, built-in bookcases, and a sales counter. He also wanted "a fireplace, an inside drinking fountain, easy chairs, smoking stands, floor and table lamps."⁸⁵ With cheap labor and available materials, Lyle Bennett incorporated King's ideas in the design, and he certainly did so with style. The result was the most decorative room in the monument. Beams, corbels, paneled counters, railings, and bookshelves were carved with Spanish colonial and Native American designs. The prominent corner fireplace, flanked by bancos, warmed the room. Finished with the comfortable and characteristic furniture built by the CCC, the room invited visitors to come in and stay awhile.

In addition to the usual finely crafted furnishings, the museum and visitor center benefited from the federal art project. Pablita Velarde completed a number of paintings for the museum exhibit cases depicting Native American government, seasonal ceremonies, and the use of animals.⁸⁶ Pastel artist Helmut Naumer did four scenes of Rio Grande pueblos – one of San Ildefonso, one of Jemez, and two of Tesuque.⁸⁷ Sculptor John Raymond Terken completed a series of "heads of the Bandelier types" for the museum, basing them on a "skull here at the office" and information on hair dress from "the old Spanish Reports." He also completed kiva and house models for the museum.⁸⁸ Chris Jorgensen painted a watercolor entitled "Desert, Mountains and Cactus," which the staff put on display in the museum.⁸⁹ In 1952 the Southwest Parks and Monuments Association donated a Paul Coze painting of Cave Kiva to the monument. *Arizona Highways* magazine had used the painting as an illustration for an article.⁹⁰

The building has undergone a number of changes in recent years. In 1974-75, an additional exhibit room of concrete block construction was built. New exhibits in that room and the 1930s exhibit spaces

contained nearly life-sized replicas of prehistoric pueblo room interiors. This alteration modified the ambience of the 1930s exhibit space. In 1975 the building received an emergency power supply, a lighting system, and a security alarm system. A new security system was installed in 1982. The building was subject to the changes under Package 224, particularly the rehabilitation of water, sewer, electrical, and natural gas services; rehabilitation of wood structural members; and installation of insulated windows and fire alarm systems.

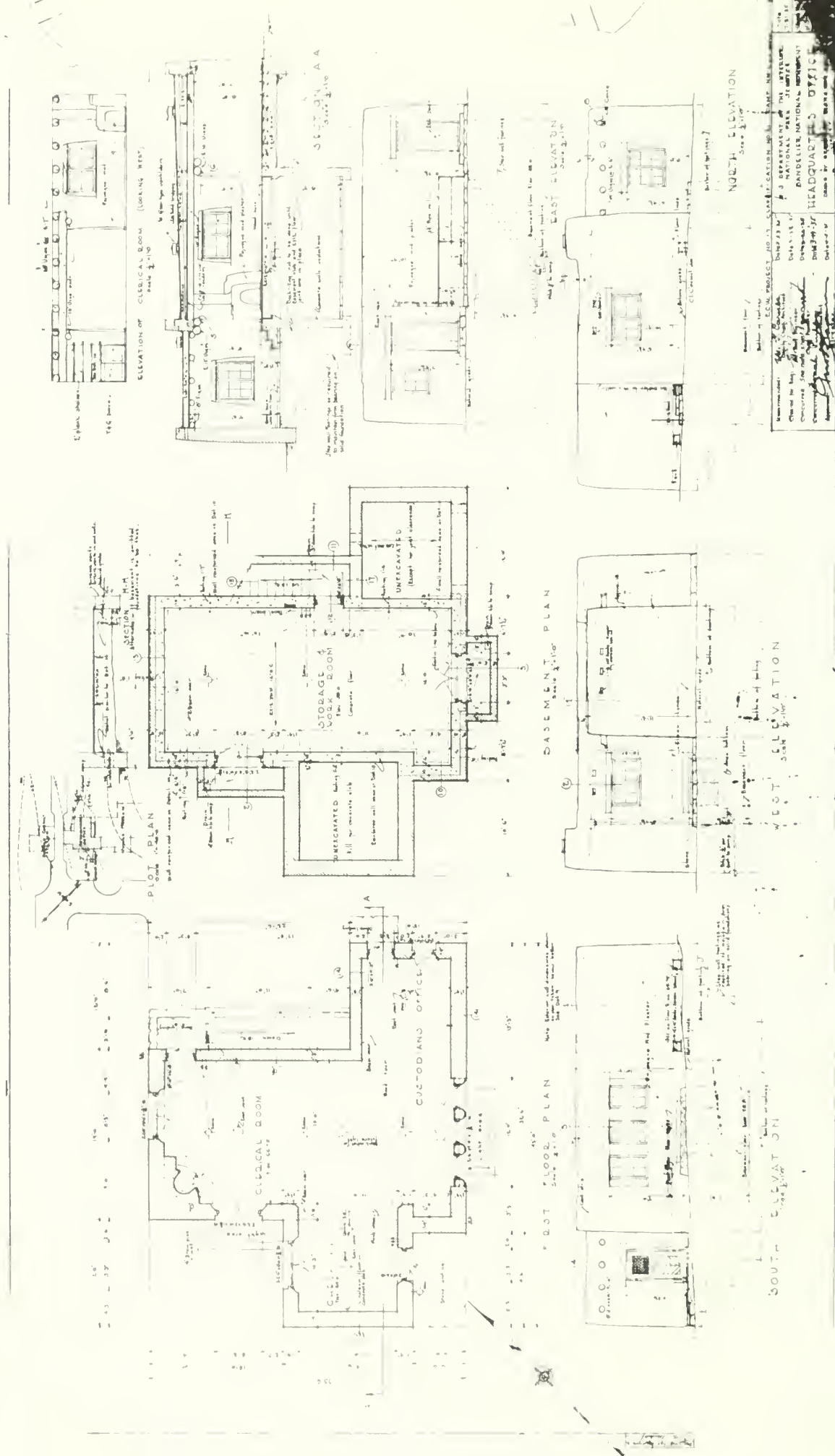
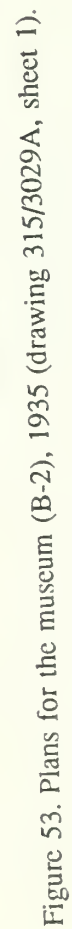


Figure 51. Plans for the headquarters office (B-2), 1935 (drawing 315/3008A, sheet 1).



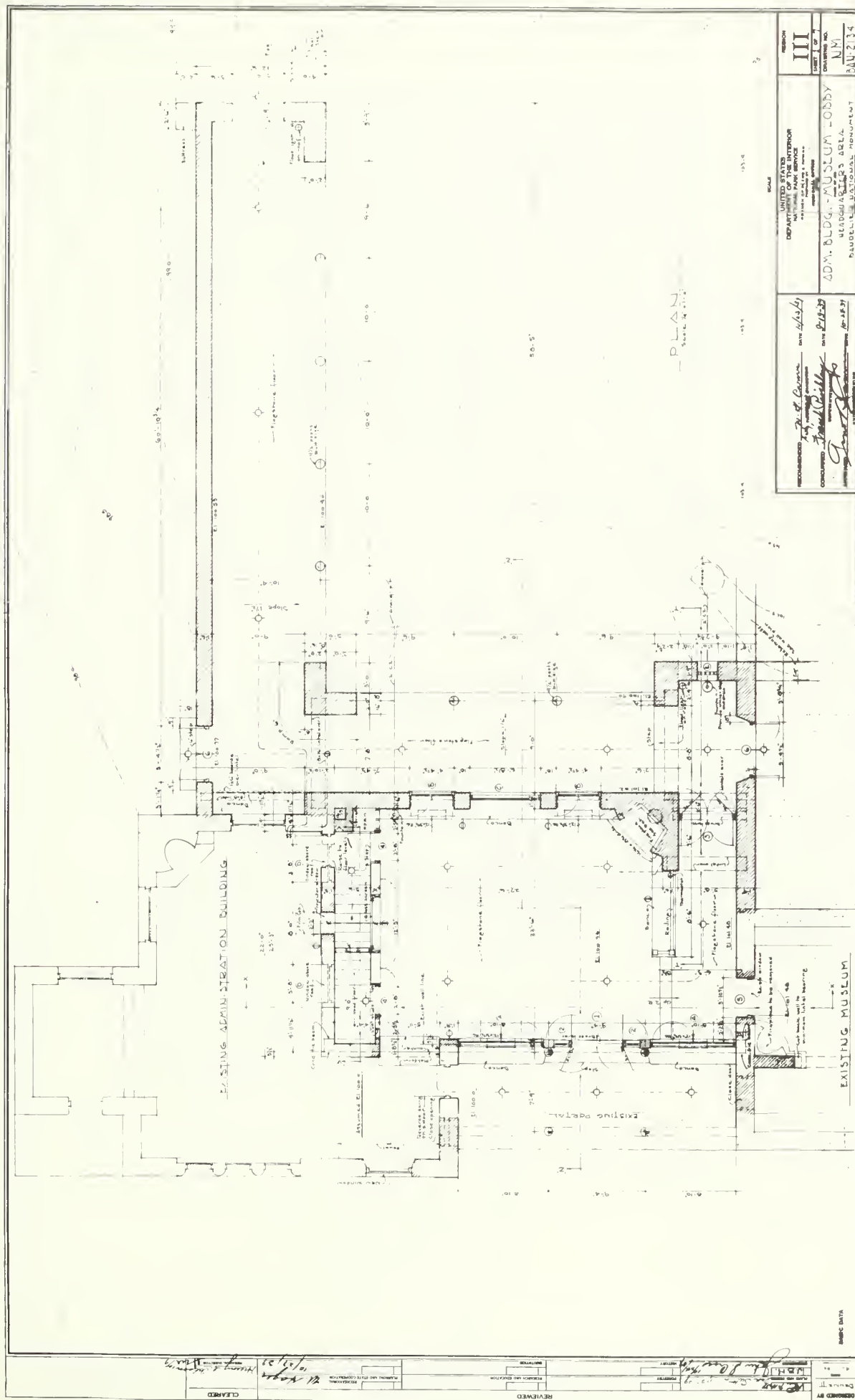


Figure 54. Plans for infill between the headquarters office and the museum (B-2), 1939 (drawing 315/2134, sheet 1).

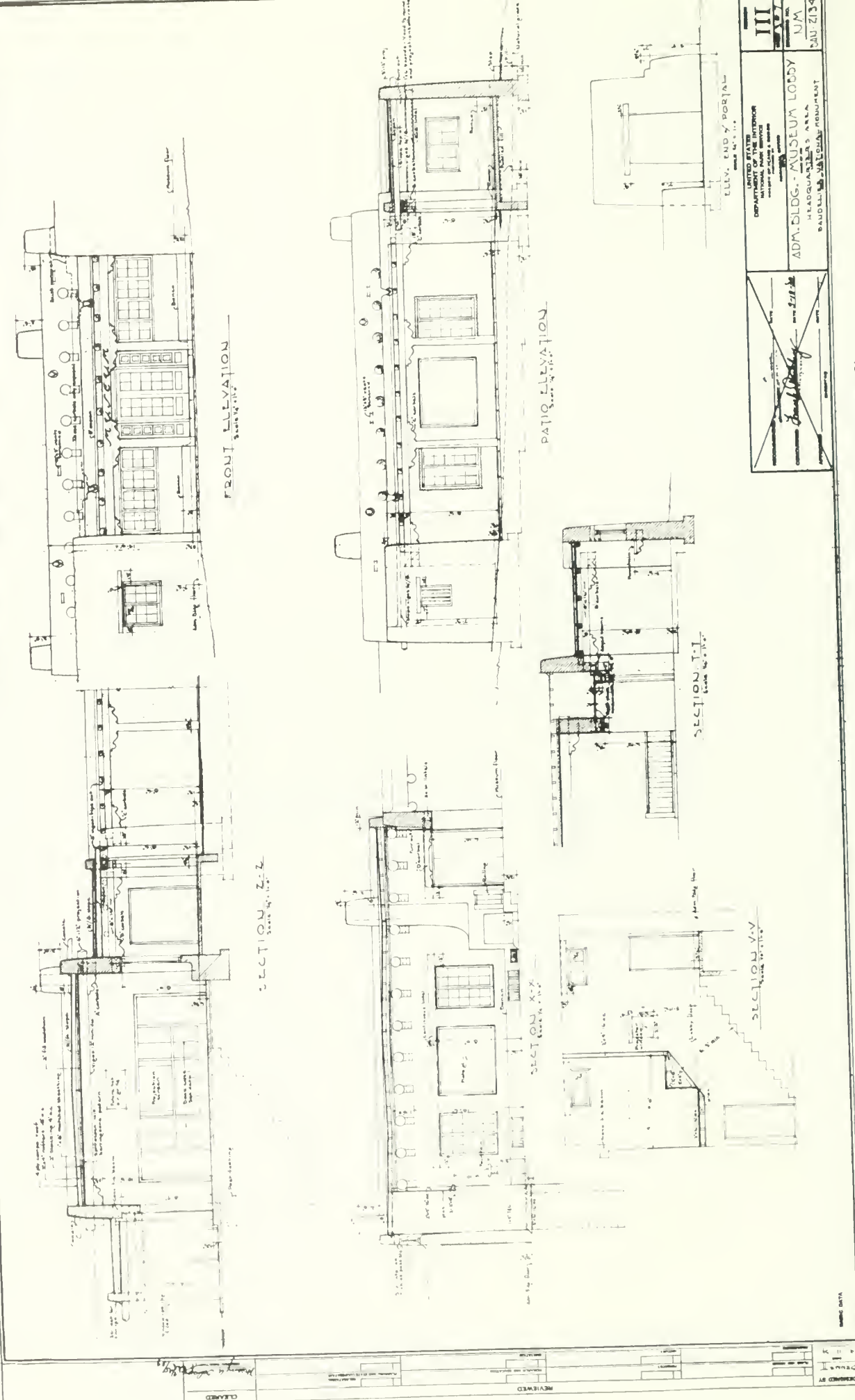


Figure 55. Plans for infill between headquarters office and museum (B-2), 1939 (drawing 315/2134, sheet 3).



Figure 56. The administrative office (between the portals) and the museum building (without windows) in 1936. Note the CCC barracks structure to the right. (Photo: Bandelier)



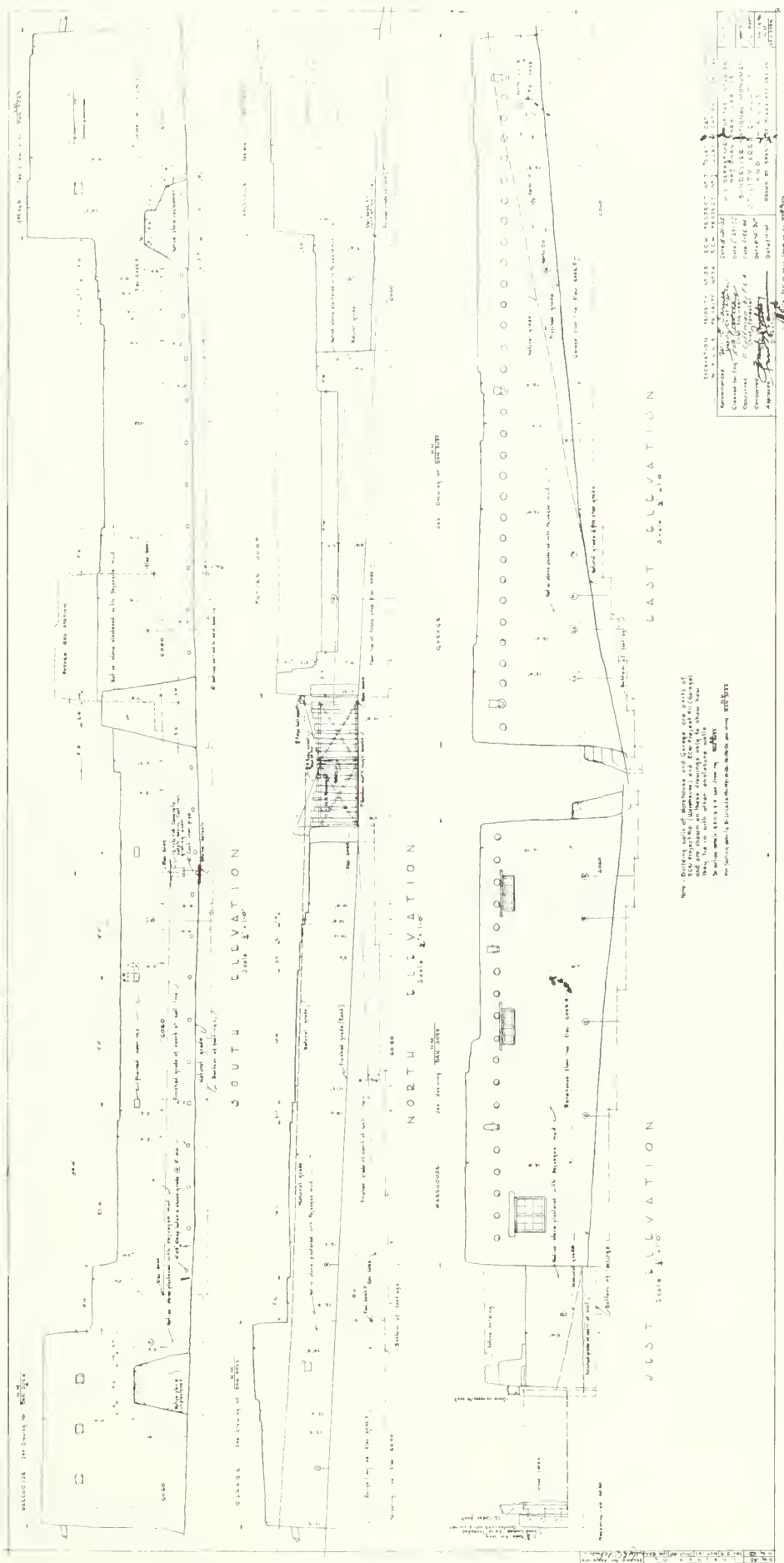
Figure 57. The visitor center today. (Photo: Harrison for NPS)

B-3, Maintenance Warehouse

This structure was designed as the warehouse and office for the maintenance yard. The maintenance yard is defined by four buildings – B-3, B-4, B-5, and B-6 – all of which incorporated the surrounding wall that screened it from the visitors' view (figure 58.) The building (figures 59-61), constructed in 1935, is at the northwest end of the maintenance yard. Because of the gradual slope of the hillside, the building had deep footings at one end (northeast) and footings meeting natural grade on the other end (southwest). The building contains 191 cubic yards of masonry, 87 cubic yards of which were the footing buried for the uniform floor line. The stone walls had cement mortar to approximately 2 feet above grade. The remainder of the walls were laid in Pojuaque mud mortar to viga height, where the cement mortar began again.⁹¹

The building has undergone a number of changes. In 1939 the monument staff built a wood frame and metal lath partition across the warehouse space. The partition, which had a plaster finish, divided the interior space. An additional double window was installed on the east elevation. The "attendant's room" in the northeast corner of the building was Project Superintendent Hub Chase's office. When the monument staff needed additional office space in that building – possibly because of increased numbers of maintenance personnel – they partitioned off one portion of the warehouse room and added windows for adequate lighting. The windows and door came from the old ranger residence (pre-NPS).⁹² Beginning in 1945, the northeast end of the building was used as a two-room apartment. It was still being used as an apartment when the monument staff installed a propane gas stove and water heater in 1953.⁹³ Other than a corner fireplace in the attendant's room, no other original heating system for this building appeared in the drawings or the specifications. Additional heat sources such as wood stoves may have heated the building. A natural gas, forced-air furnace was installed in 1971.⁹⁴ (It may have replaced an earlier gas furnace.) Additional heaters were installed in 1979, and a swamp cooler was added in 1980.⁹⁵ In 1983 and 1984, the building received new wiring and replacements of water and sewer lines and natural gas service.

Lyle N. Barcume designed the building. Interior changes made in 1939 were designed by a person with initials "J.M.E.," probably ranger James M. Eden.



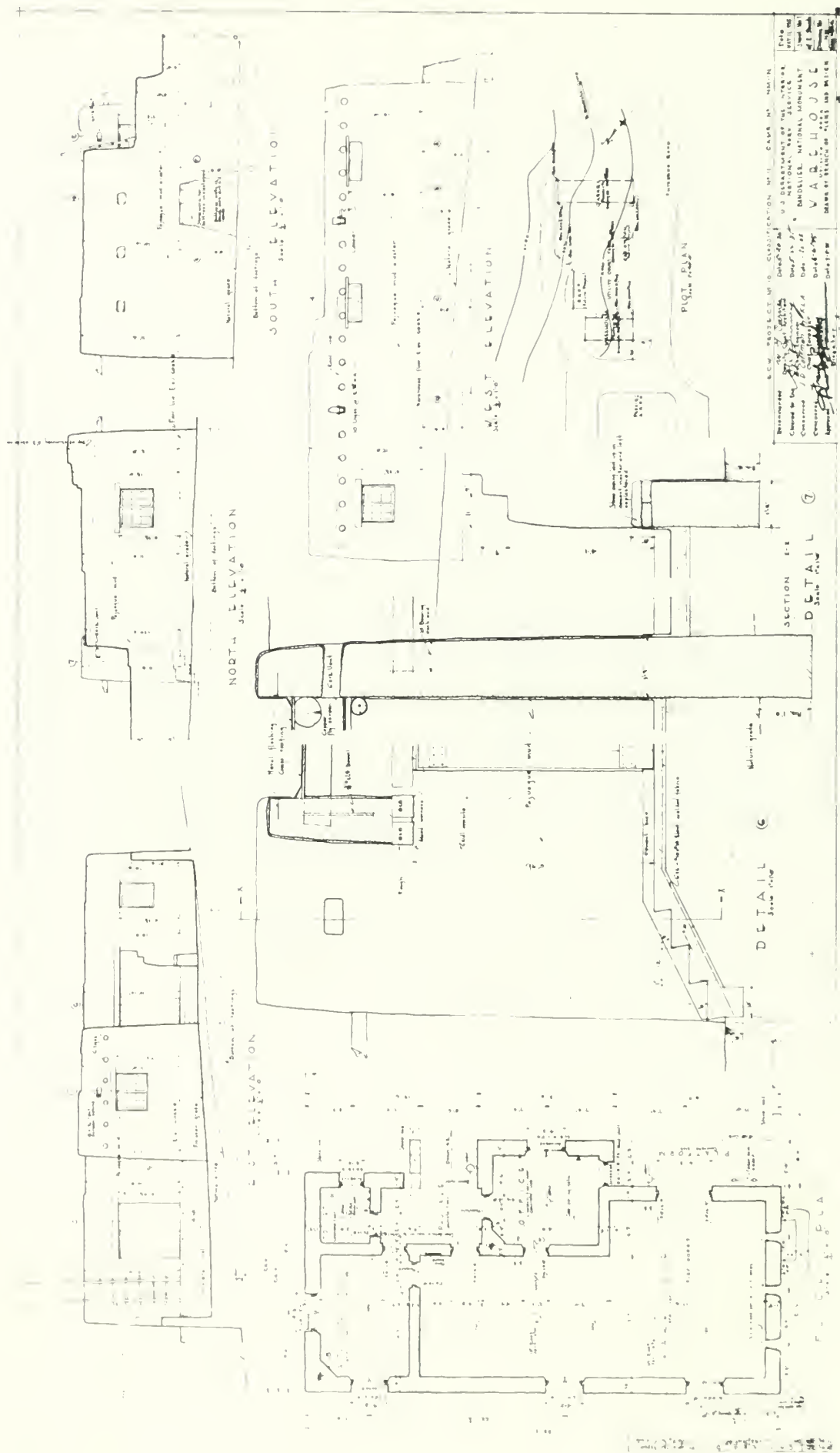


Figure 59. Plans for the maintenance warehouse (B-3), 1935 (drawing 315/3022, sheet 1).



Figure 60. In this photograph of B-3 shortly after construction (probably 1936), the thin mud-plaster finish is evident. (Photo: Bandelier)



Figure 61. In this 1982 photograph, the Pojuaque plaster has weathered off the building entirely. (Photo: Copeland for NPS)

B-4, Garage and Blacksmith Shop

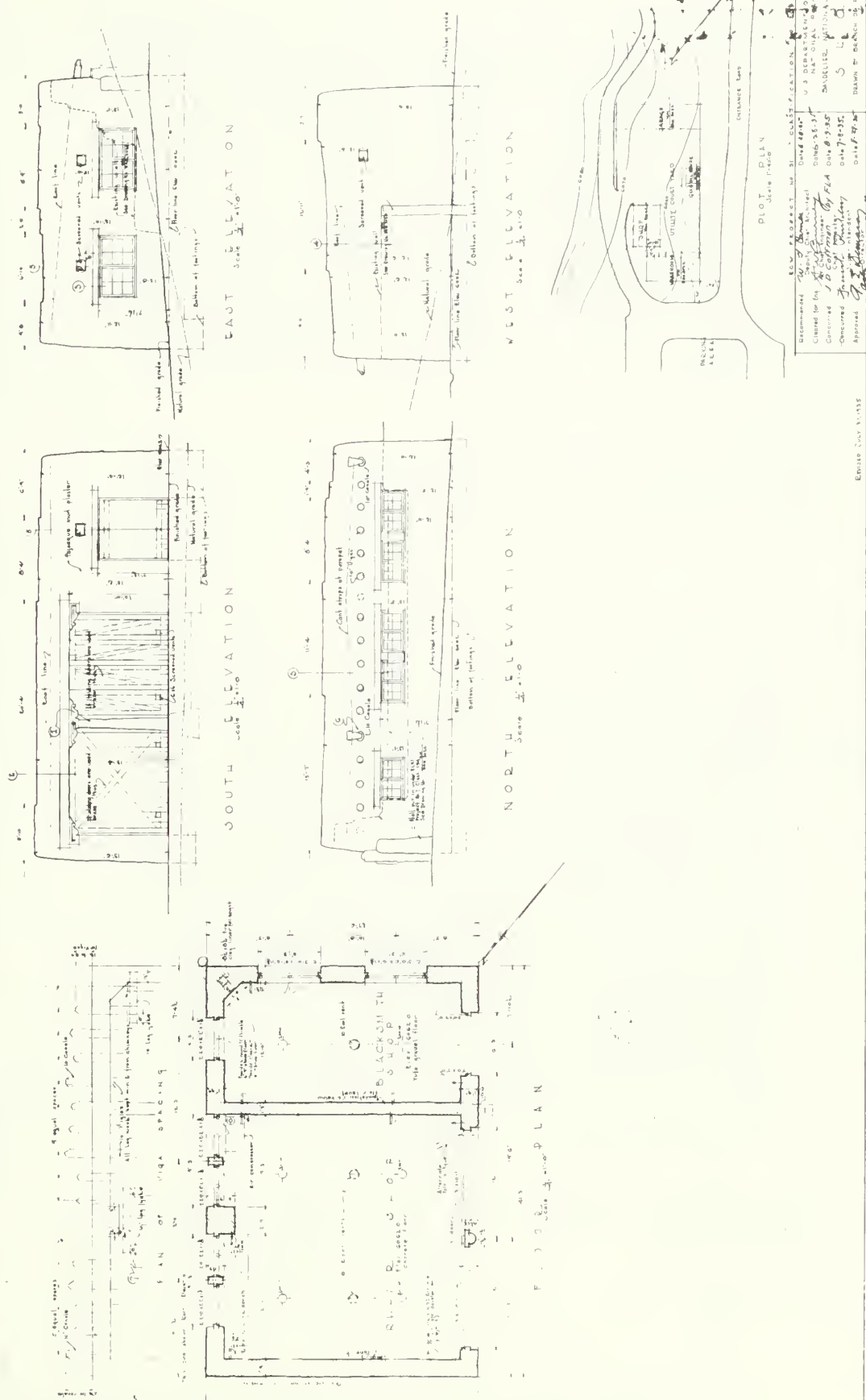
This building (figures 62 and 64-65) was completed on October 21, 1935. Because the structure was only 13 feet 9 inches from the warehouse (B-3), and because of limited building space, the reviewing fire protection engineer gave the designer two choices: either move the building 40 feet away, or remove the windows from the as-designed west wall. The designer removed the windows. The stone wall separating the two-bay (on the south facade) repair shop and the single-bay blacksmith shop was put in for the same reason.⁹⁶

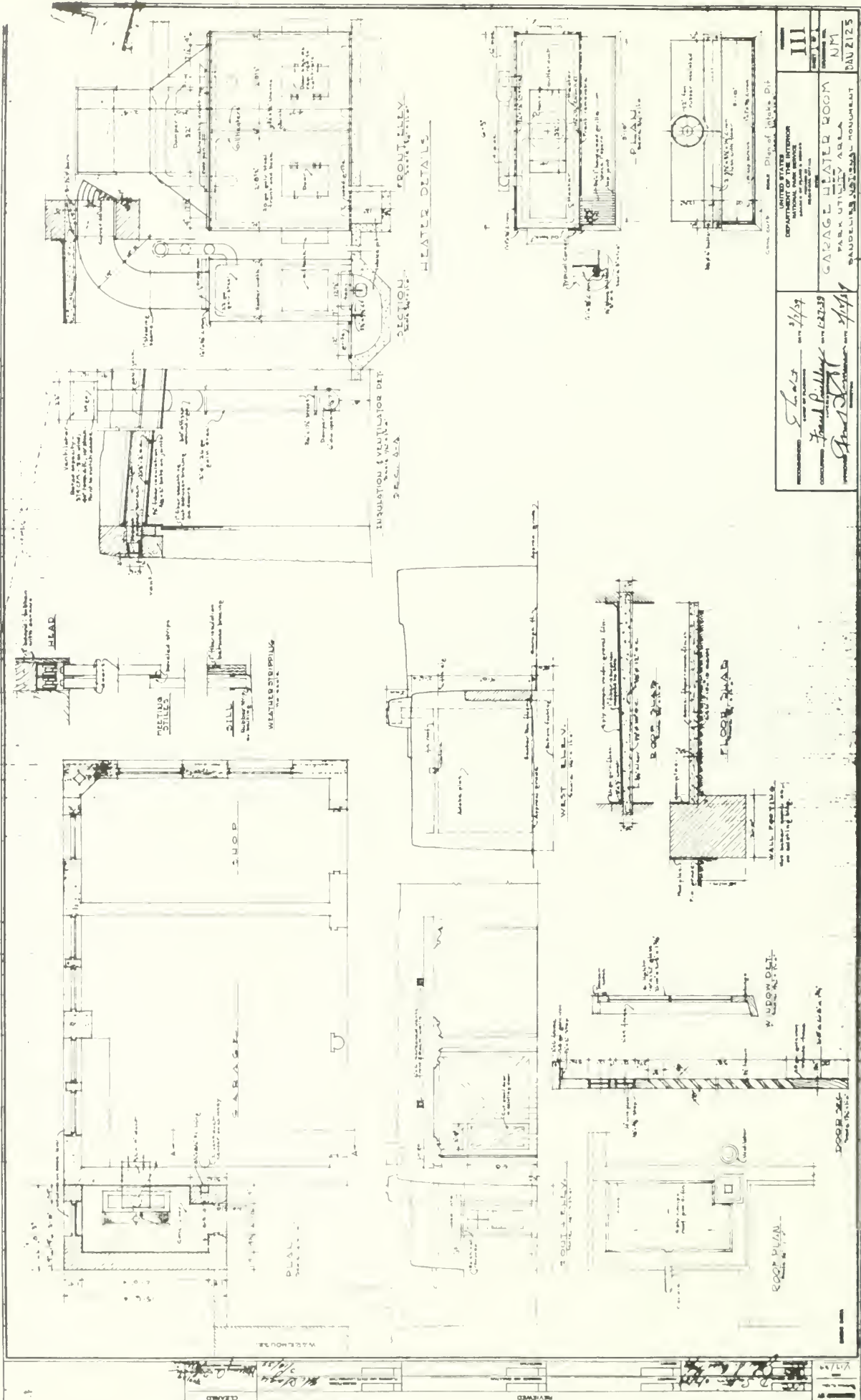
Interior and exterior finishes were simple. Floors were originally poured concrete in the garage repair shop and 6 inches of rolled tuff gravel in the blacksmith shop. To improve working conditions a cement floor was poured in the blacksmith shop in January 1950.⁹⁷ The on-site architect wrote that "frames were painted and doors were stained," but he did not specify any colors.⁹⁸

On the morning of January 17, 1938, some CCC enrollees were cleaning the gas tank on one of the trucks. Somehow they started a fire, which spread to the workbench and wall cabinets. The fire destroyed the entire contents of the garage, including the truck, and all the hand tools and contents of the blacksmith shop. The damage was repaired that spring. Burned lintels were replaced and damaged wall sections were replaced or stabilized, depending on the amount of destruction.⁹⁹ In 1986 charred plaster was still visible on some of the interior walls.

Other changes to the building included the addition in 1939 of a heater room to house an oil furnace (figure 63), and the construction in 1942 of bins in the blacksmith shop for plumbing supplies.¹⁰⁰ The oil furnace was replaced by a gas furnace by 1965. Over the years the garage portion was turned into the carpenter's shop, and new lighting was installed in that portion in 1977.¹⁰¹ In 1981, the building received a new foam roof. The building was rewired and its natural gas service replaced in 1983 and 1984, respectively.

Lyle N. Barcume designed the building. Lyle Bennett designed the 1939 heater room addition.





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Figure 63. Plans for the garage heater room (B-4A), 1939 (drawing 315/2125, sheet 1).



Figure 64. In this photograph of B-4, some evidence of the fire that damaged the building is visible in the charred plaster above the lintel on the right. This photograph was taken after the 1938 fire but before construction of the 1939 heater room addition. (Photo: Bandelier)



Figure 65. In 1982 the plaster had weathered off B-4 and exposed the stone. (Photo: Copeland for NPS)

B-5, Gas and Oil House

In 1935 the CCC enrollees constructed this small structure (figures 66 and 67). It has undergone very little alteration since that time.¹⁰² The most time-consuming aspects of constructing this building were constructing the footing that brought the structure up to the grade of the maintenance yard and tying the back wall of the building into the stone wall surrounding the yard. The wall portions below grade and from the flashing to the finished height had cement mortar. The remainder had Pojuaque mud mortar.¹⁰³ The modern gas pumps, a new tank, and bollards were added in recent years. The building received a new foam roof in 1981.

Lyle N. Barcume designed the building.



Figure 66. This northwest elevation of B-5, photographed in 1982, shows how the building retained its architectural character and integrity of function throughout the decades of its use. (Photo: Harrison for NPS)

B-6, Garage

Constructed in 1935 and 1936, this building housed vehicles and other equipment (figure 68). The two end bays of this eight-bay building were enclosed and used for materials storage. The other six bays remained open. Original floors were tuff gravel; a concrete floor was poured in 1977.

This was the last building constructed in the walled maintenance yard. The other buildings, B-3, B-4, and B-5, and the wall footings had to be finished first so that they could be backfilled with the large amounts of material excavated for this building.¹⁰⁴ When the CCC completed the building, landscape architect Charles Richey commented that the building had an "unusually nice appearance for a building of this kind."¹⁰⁵ The use of carved corbels capping the columns that separated the bays (figure 69) added character to a relatively simple structure. In 1943, 32 bins were constructed inside this building to store equipment and materials.¹⁰⁶ Over the years, the size of park maintenance vehicles became larger, making this building's original use obsolete. The use changed to a storage facility. The monument staff enclosed six of the eight bays. Additional interior partitions constructed of 2 x 4s, Sheetrock, and plywood divided the interior space into six sections. The maintenance staff did most of this work in 1977 to store lumber and forest fire suppression tools.¹⁰⁷ This fire cache may have been created in the aftermath of the 1977 La Mesa fire. The building had natural gas service installed in 1984.

Lyle N. Barcume designed the building.

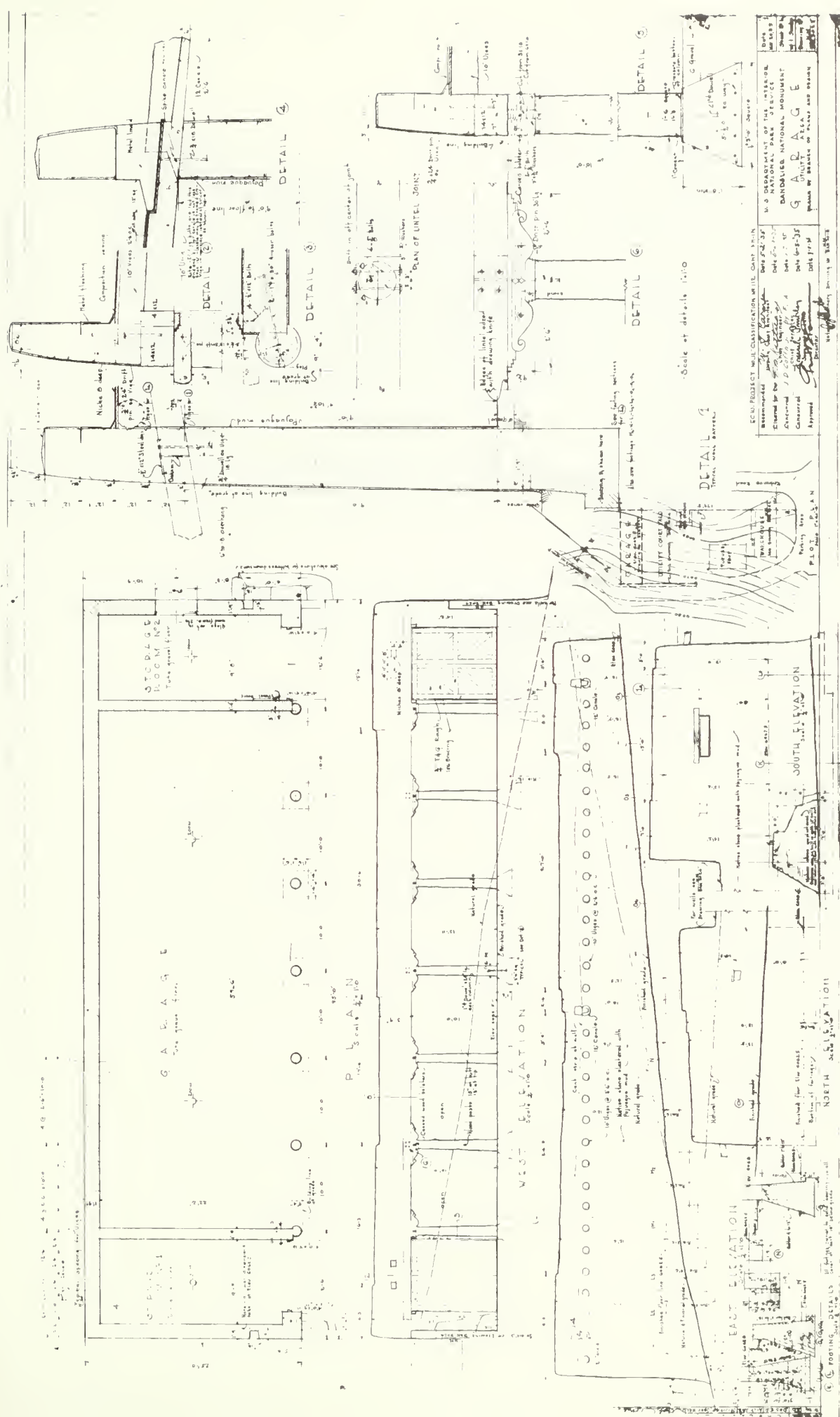




Figure 69. When the garage (B-6) was completed in 1936, landscape architect Charles Richey commented on the structure's "unusually nice appearance for a building of this kind." In 1988 the building was used to store materials. (Photo: Copeland for NPS)

B-7, Residence 1

This building was constructed in 1936 (figures 70 and 72-73). At first, the monument staff was pleased with this and its other new houses. The custodian noted in September 1936, "I think everyone down here in Bean Gulch is pretty well satisfied."¹⁰⁸ After living in the houses for a few years, however, the staff wanted to build an additional room on this house and others. The bedroom addition on the northeast corner was finished on June 13, 1941.¹⁰⁹ The CCC had also built a small wood storage shed onto the building in 1939, and custodian Art Thomas built shelving in the garage in January 1941¹¹⁰ (figure 74).

The building has undergone a number of changes. Propane gas, installed in 1939, originally heated the building.¹¹¹ Fuel lines from a 550-gallon oil storage tank were built to this house in September 1944.¹¹² Another fuel line from a tank in residence 2 (B-8) to a space heater in this building was built in 1953.¹¹³ By 1964, natural gas heated this building. In 1967 the monument staff installed kitchen cabinets and tiled the bedroom. In 1976 and 1977 the staff replaced the original windows with Andersen casement thermal pane windows (figure 71).¹¹⁴ The kitchen underwent additional rehabilitation in recent years. The water and sewer lines were replaced in 1983, and the electrical and gas lines were replaced in 1984.

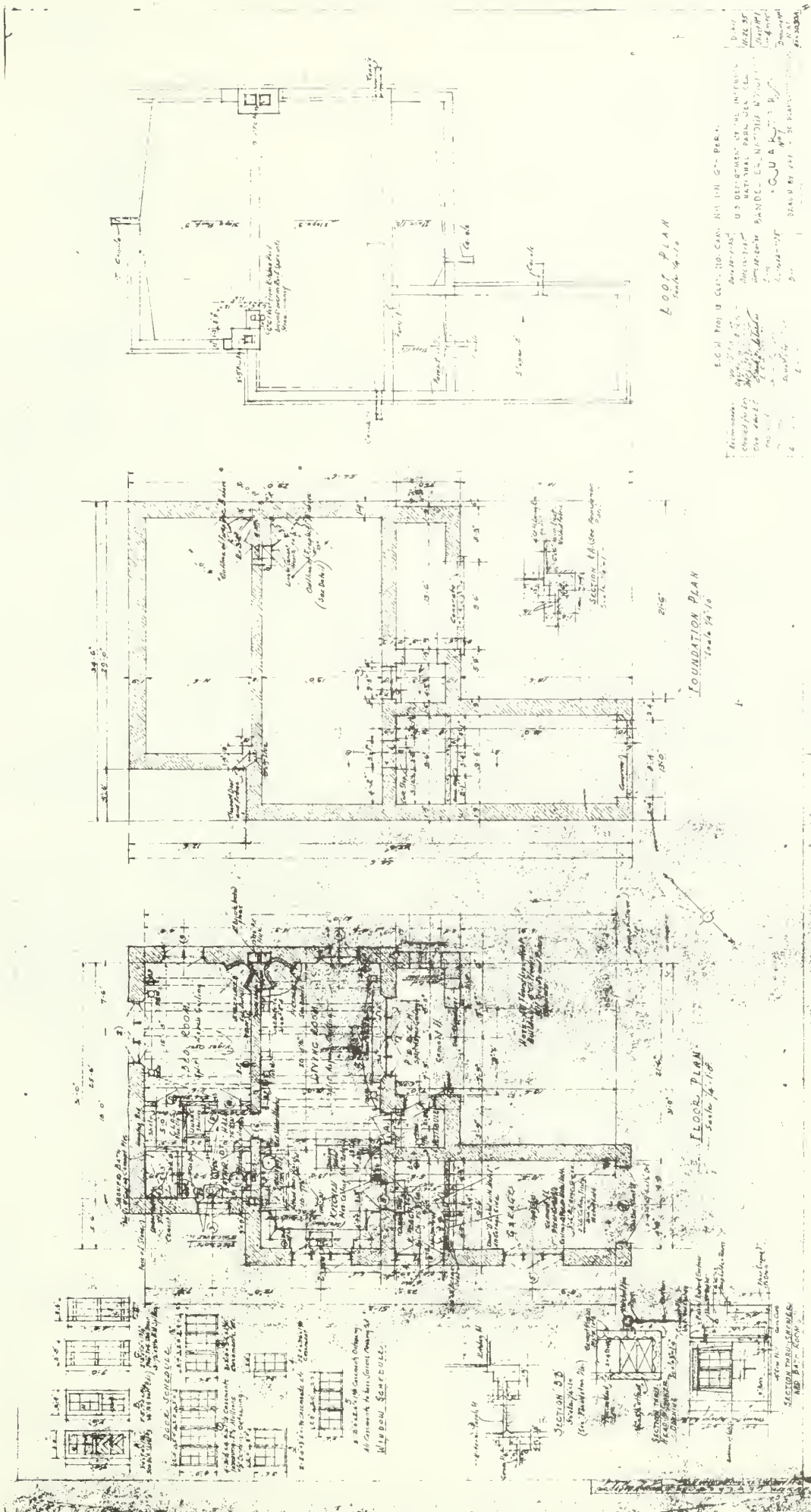
A. Paul Brown designed the building. Lyle Bennett and Del Jones designed the woodshed additions and propane gas installation service. The designer's name on the plan for the addition is illegible.



Figure 70. Residence 1 (B-7) was completed in 1936. At first the occupants of Bandelier's residential structures were quite satisfied with their homes. After a short period of occupation, however, the residents pushed for the construction of an additional room on each residence. In 1941, the CCC finished construction on the bedroom in the northeast corner of the building. The wood storage area was constructed in 1939. (Photo: Bandelier)



Figure 71. In 1982, changes to B-7 and its immediate landscaping were evident. Single-pane thermal windows replaced the originals. The low stone walls defining the small yard were constructed during the 1960s. (Photo: Harrison for NPS)



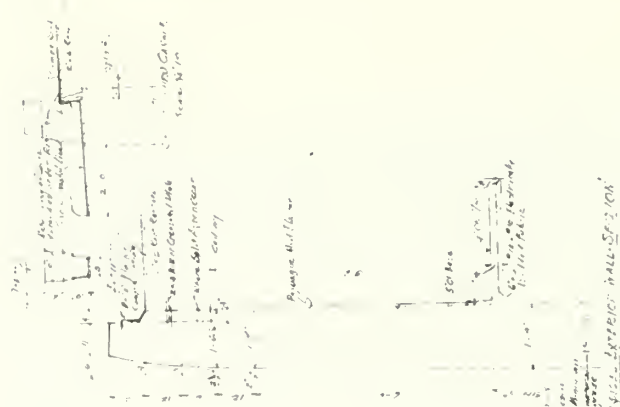


Figure 73. Plans for residence 1 (B-7), 1935 (drawing 3030A, sheet 2).

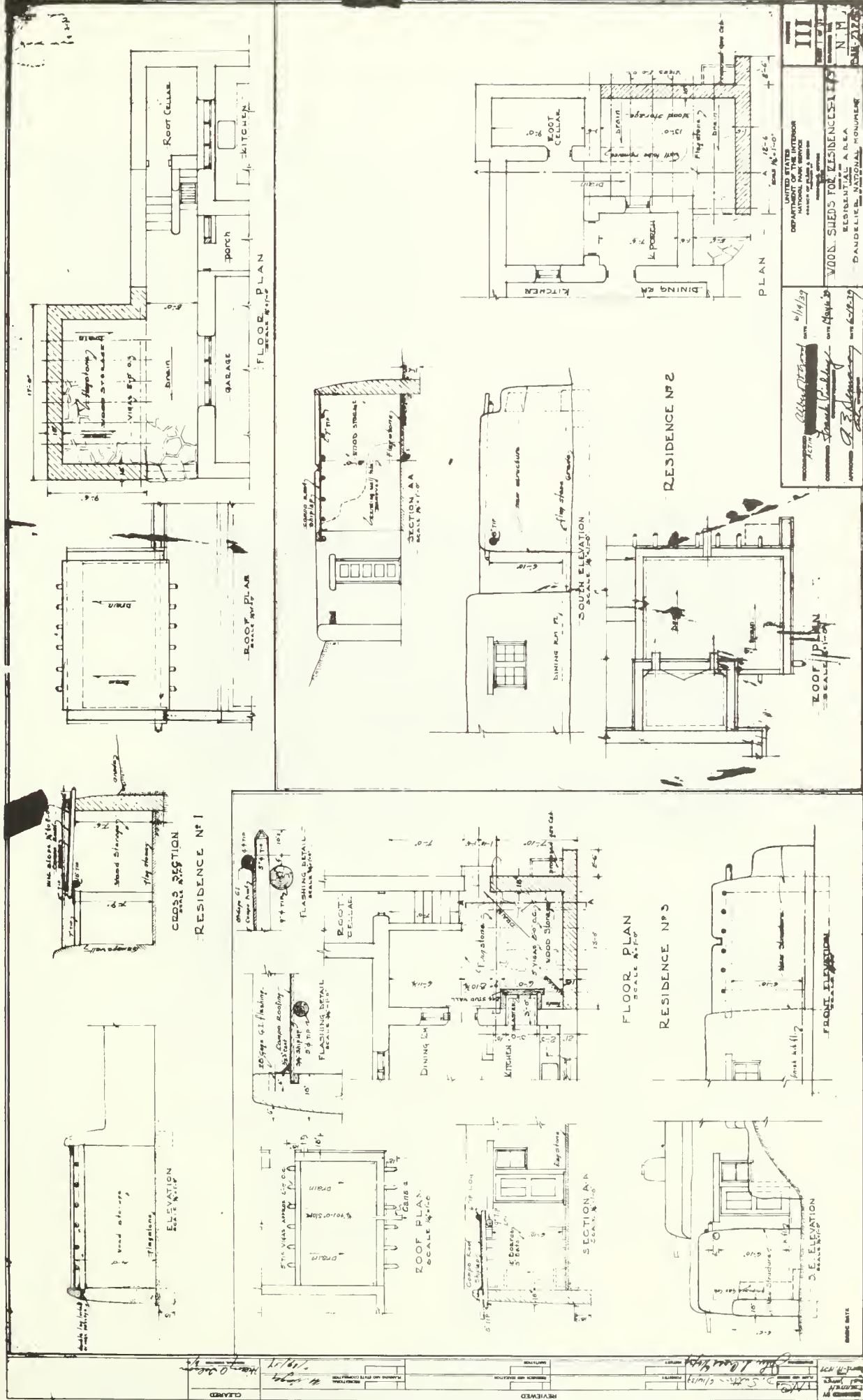


Figure 74. Plans for the woodshed addition to B-7, 1939 (drawing 315/2128, sheet 1).

B-8, Residence 2

The CCC constructed this building in 1937 (figures 75 and 76), as quarters 2. The cement floors in this structure received a coating of A.C. Horn Company's Keramik No. 34 autumn brown copper as stain. The stain was left to season, and then it was cleaned and waxed with several coats of paste wax.¹¹⁵ The CCC constructed a root cellar and a wood-storage room for this building in 1938 and 1939, respectively, and made minor modifications for the installation of propane gas (figure 74). In 1941, the living room was converted into an additional bedroom, and a new heating system was added. The heating system was changed to a natural gas forced-air furnace in 1964. The kitchen was remodeled and the back patio was enclosed in 1973. Most other modifications to the building came under the category of maintenance – painting the interior, repairing roof leaks, and the like.¹¹⁶ The water and sewer lines were replaced in 1983. The building was rewired and new gas lines were installed in 1984.

A. Paul Brown designed the building. In 1939, Lyle Bennett and Del Jones designed alterations. The designer's name on the 1941 alterations is illegible.



Figure 75. Like the other residences, residence 2 (B-8) underwent a number of changes before World War II. Shown here in 1940, the building nestled gently into its small site in the residential area. (Photo: Bandelier)

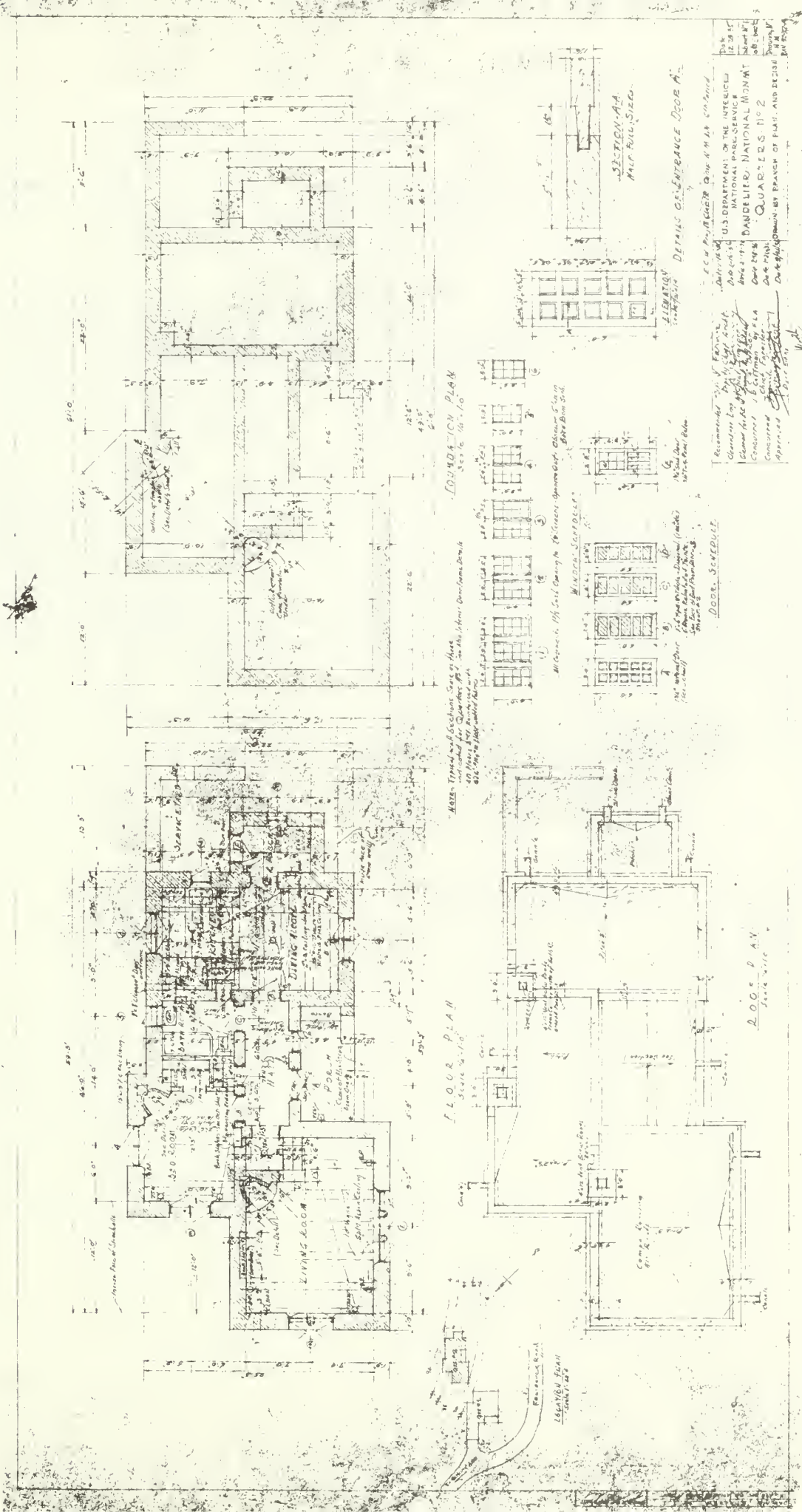


Figure 76. Plans for residence 2 (B-8), 1936 (drawing 3032A, sheet 1).

B-9, Comfort Station

Constructed in 1935, this building was originally connected to the headquarters (B-2) by a portal (figures 77 and 78). This portal spanned the road that led to the campground. It served as the checking point for the adjacent office and the covered entry to the women's rest room.¹¹⁷

This building had many of the same characteristics of the other Bandelier structures of the period. The stone footings were laid in a concrete mortar, and the stone walls above were laid in a mud mortar. Exterior walls had a thin coat of Pojuaque mud plaster. Interior walls were hard plaster, painted "egg shell color from ceiling to window sill and from window sill to base including partitions . . . a Tesuque green. Base and floors were painted a brown."¹¹⁸ A 1940 plan for alterations included the installation of a 37,500-BTU furnace and the removal of the portal. Although the furnace went in, the portal stayed.

Additional changes continued through the years. In 1965, two natural gas forced-air furnaces were installed. During a 1966 rehabilitation, new tile floors and drains were installed. The rear of the portal between the two buildings was walled off with a toned slump block in recent years; the exact date is elusive. Other changes to the building have been minor maintenance repairs.¹¹⁹ The building flooded in the aftermath of the La Mesa fire in 1977, leading to the removal of original fixtures in the men's portion and the installation of wall-mounted units. The building received a new foam roof in 1981 and new water and sewer lines in 1983. The building also received storm windows and minor modifications to accommodate handicapped access in recent years.

The building was designed by an architect with the initials "A.B.J." In 1940 alterations were done by Lyle Bennett. Norm Harp designed the 1966 alterations.

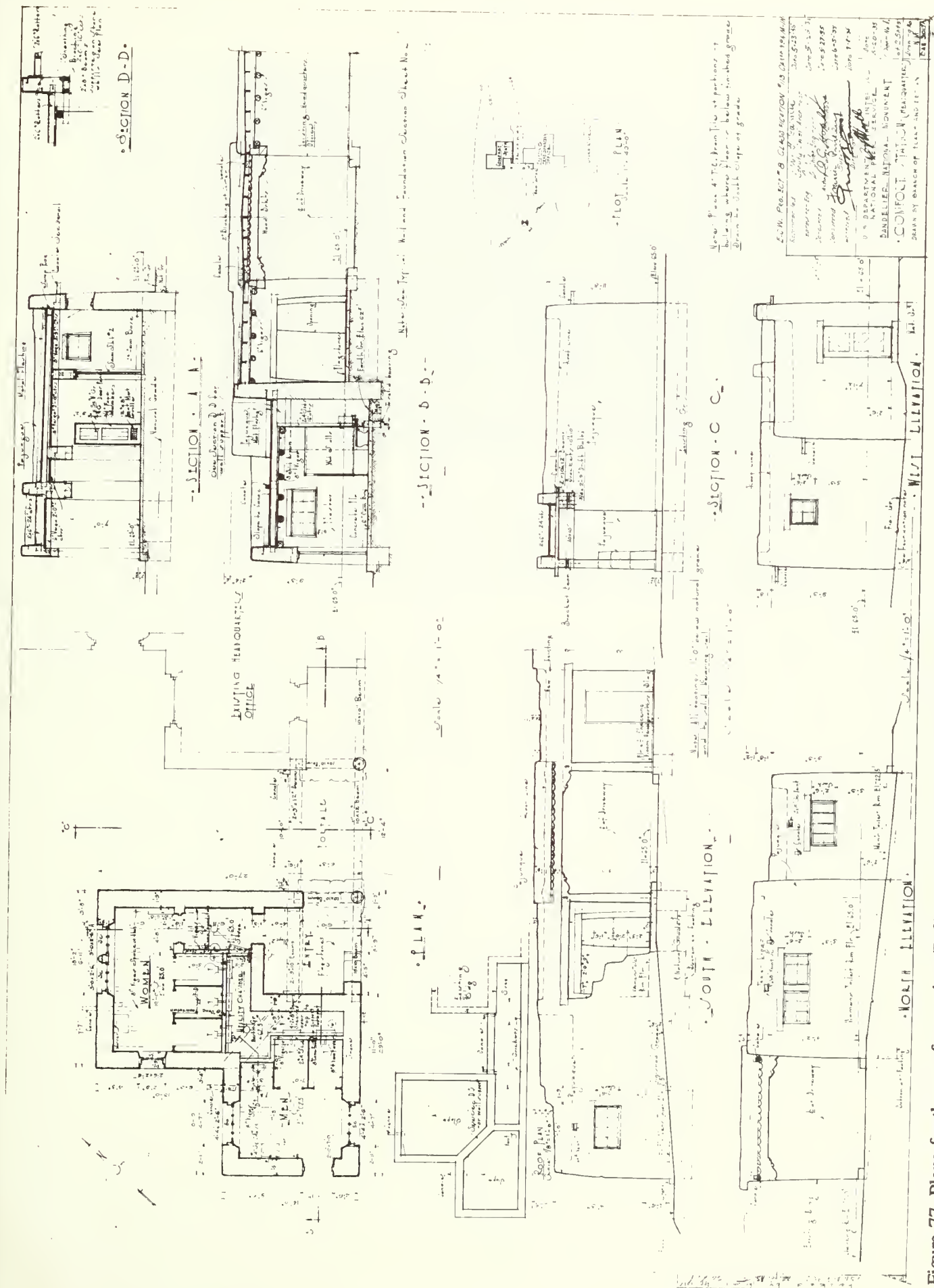


Figure 77. Plans for the comfort station (B-9), 1935 (drawing 315/3017A, sheet 1).



Figure 78. Constructed in 1935, the comfort station bordered one edge of the original road that passed by the original headquarters office (far right) underneath the portal (right). Shown here in 1982, the building retains its integrity of function. (Photo: Harrison for NPS)

B-10, Ranger Dormitory

Constructed in 1973, this building originally served as the ranger dormitory and garage (figure 79). On the advice of one of the park staff,¹²⁰ plans were drawn up to add a laundry room to the rear of the building in 1940 (figure 80). The laundry room was made large enough to include "drying spaces" where clothes would be hung to dry. The justification for the addition stated that it would be convenient for employees while "preserving the exterior appearance of the monument."¹²¹ Clothes hanging to dry outside were considered inappropriate for national park areas.

The building was designed with two living spaces, with a connecting bath and porch. The eastern living space was remodeled into a kitchen and the porch was enclosed with a slump block wall in 1973 (figure 81). Original windows were replaced with single-light thermal casement windows, probably in 1978. Natural gas wall furnaces were installed in the building in 1963.¹²² The building received a new foam roof in 1981 and updated water and sewer utilities in 1983. New wiring and gas lines were added in 1984-85.

The name of the building's designer is unknown at present. The 1940 alterations were designed by Lyle Bennett.

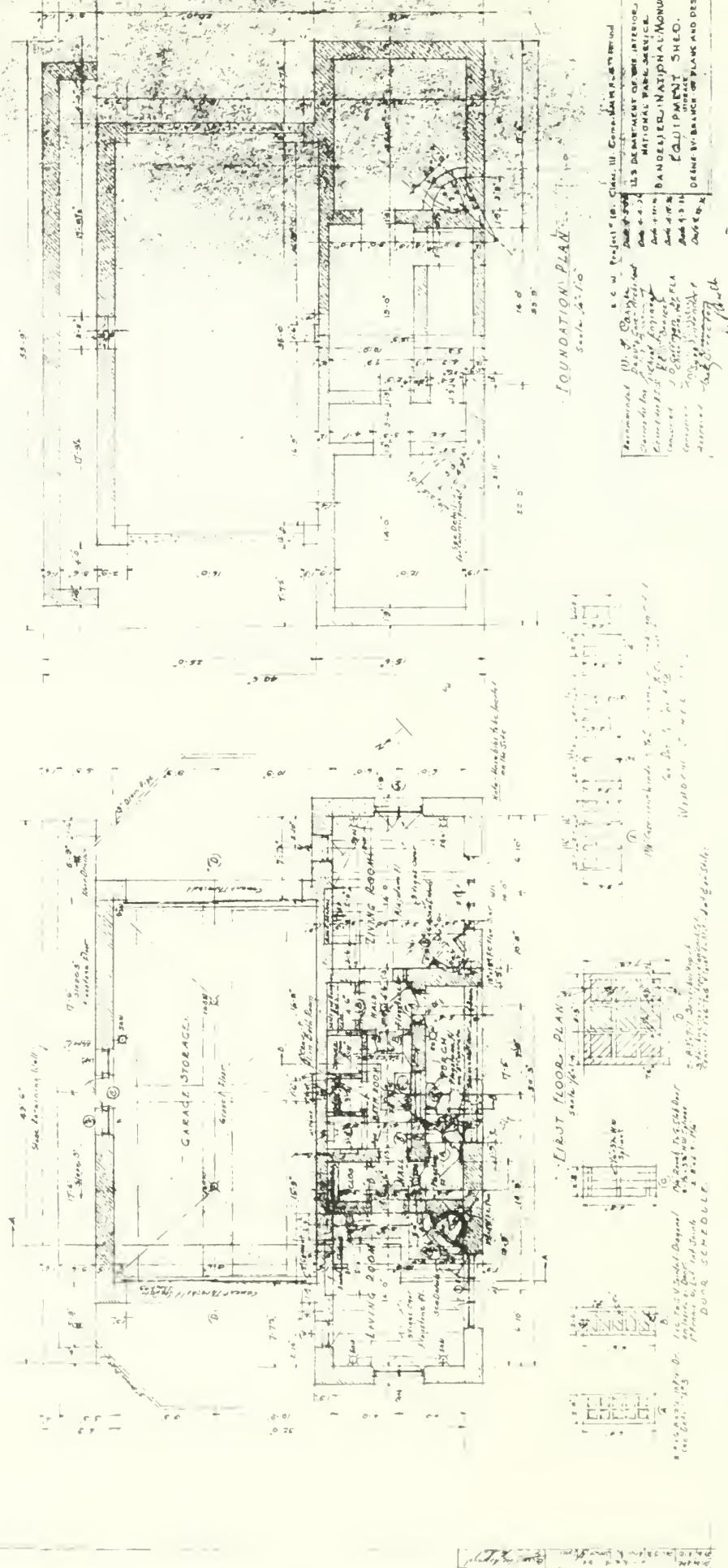


Figure 79. Plans for the ranger dormitory (B-10), 1936 (drawing 315/3034, sheet 1).

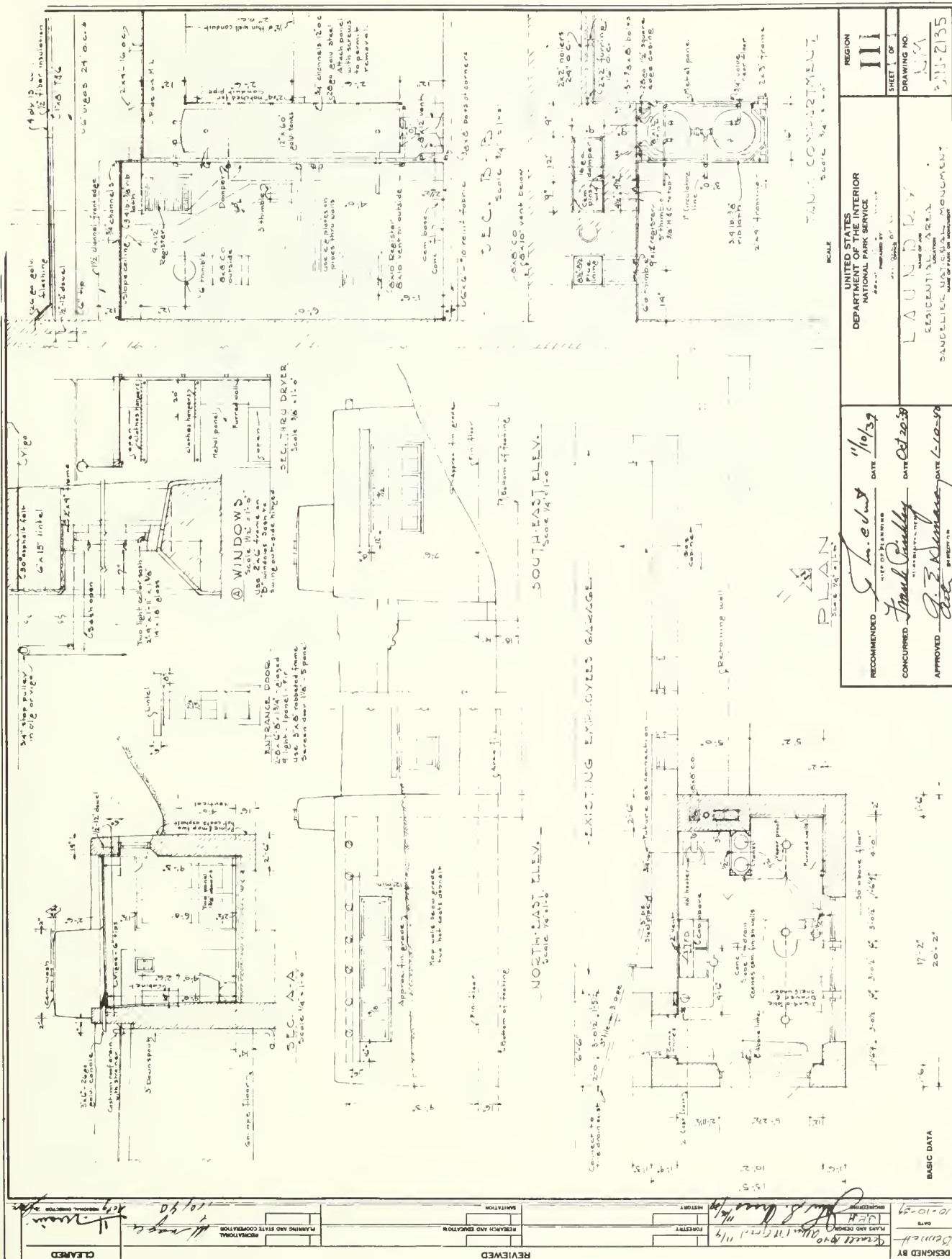


Figure 80. Plans for the laundry (B-10A), 1939 (drawing 315/2135, sheet 1).



Figure 81. Originally, the ranger dormitory (B-10) and garage had an entrance set in the recessed portal of the front elevation. In 1973 the construction of a slump block wall enclosed the portal space. This photograph shows the building in 1982. (Photo: Harrison for NPS)

B-11, Residence 3

This building (figures 82 and 84) was constructed in 1937 as a residence. A wood-storage building and root cellar were added in 1939 (figure 74) and a propane line to the kitchen from gas tanks on the southeast side of the building was installed in the same year. An oil furnace was added to this building in 1943 (figure 83). The heating system was changed to natural gas by 1964.¹²³ The living room is the only room in this building with a stone floor; others are tile.

Several changes have modified the building in recent years. These changes include the installation of Andersen thermal pane windows, addition of a foam roof, replacement of the furnace, and remodeling of the kitchen (figure 85).

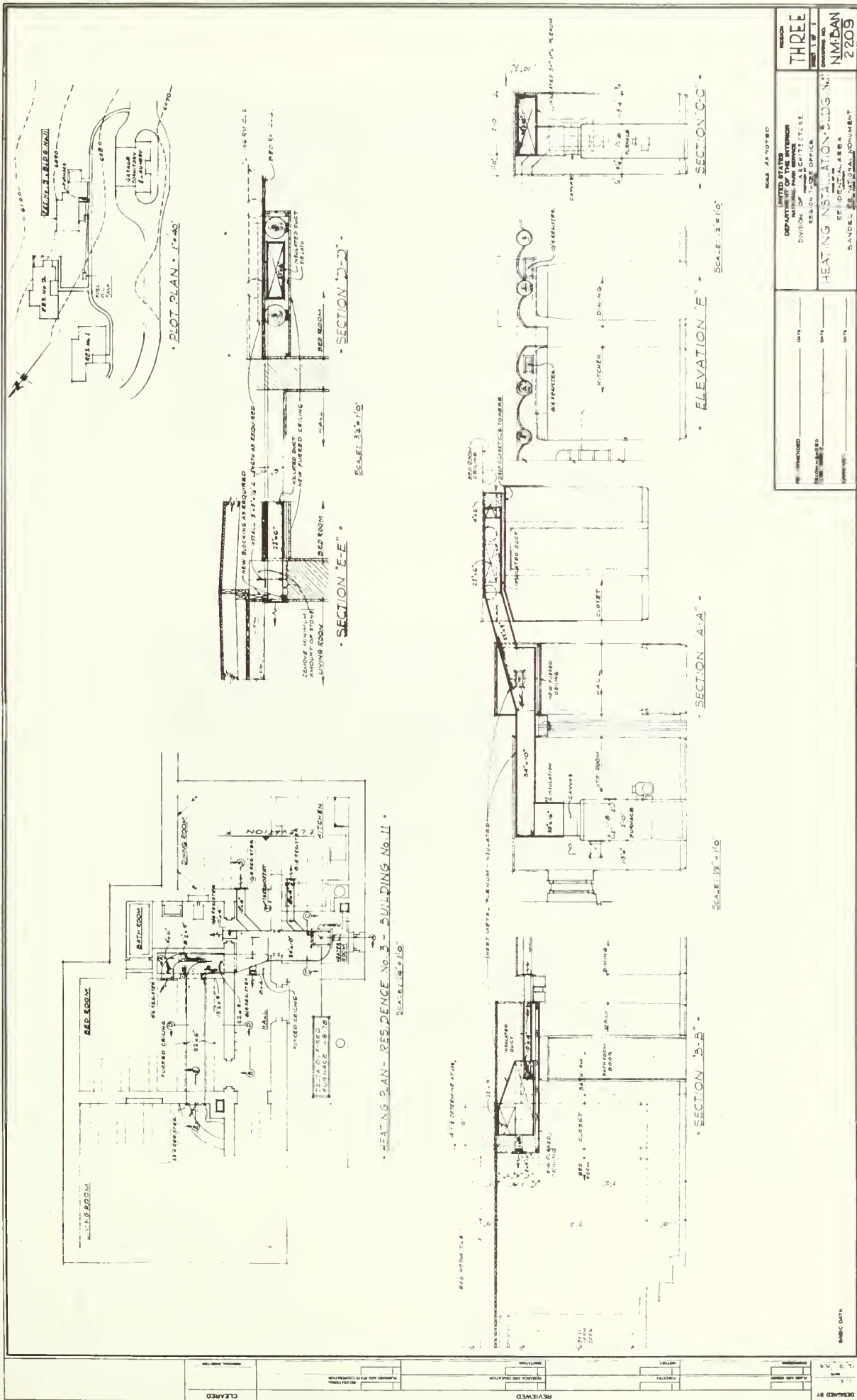


Figure 83. Plans for forced-air heating installation in B-11, 1943 (drawing 315/2209, sheet 1).



Figure 84. Shown here in 1937 during the final stages of construction, residence 3 (B-11) had a wood-storage building and root cellar added in 1939. (Photo: Bandelier)



Figure 85. In 1982 residence 3 had sustained a few changes, yet it retained its 1930s ambience. (Photo: Harrison for NPS)

B-12, Storage Building

This building (figures 86-88) was constructed in 1937 as a work space for the CCC carpentry crew.¹²⁴ In 1939 the custodian assigned the building to Mrs. Frey, the concessioner, for use as a storage building.¹²⁵ In 1941, plans were drawn to turn the southeast end of the building into a laundry room for Frijoles Canyon Lodge. These plans included the addition of a frame partition and cabinets, and changes in wiring and plumbing to accommodate washers and hot-water heaters. A skylight was also included on the plan to help light the newly partitioned room, but it may not have been constructed. The plans also called for 4-inch steel wire eyebolts to be cemented into the walls of B-12 and the adjacent B-16 to hold six 3/16-inch galvanized twisted clothesline. The partitioned room was further divided into two additional spaces at some time in recent years, but the individual building data sheet did not record a date. An incompatible concrete block addition was tacked on the northwest corner of the building in recent years, but the date of its construction was also not recorded. Rotted vigas have also been replaced and plywood attached over the shiplap ceiling. The building received a foam roof in 1981.

Richard W. Thompson designed the building. The 1941 alterations were designed by Lyle Bennett.

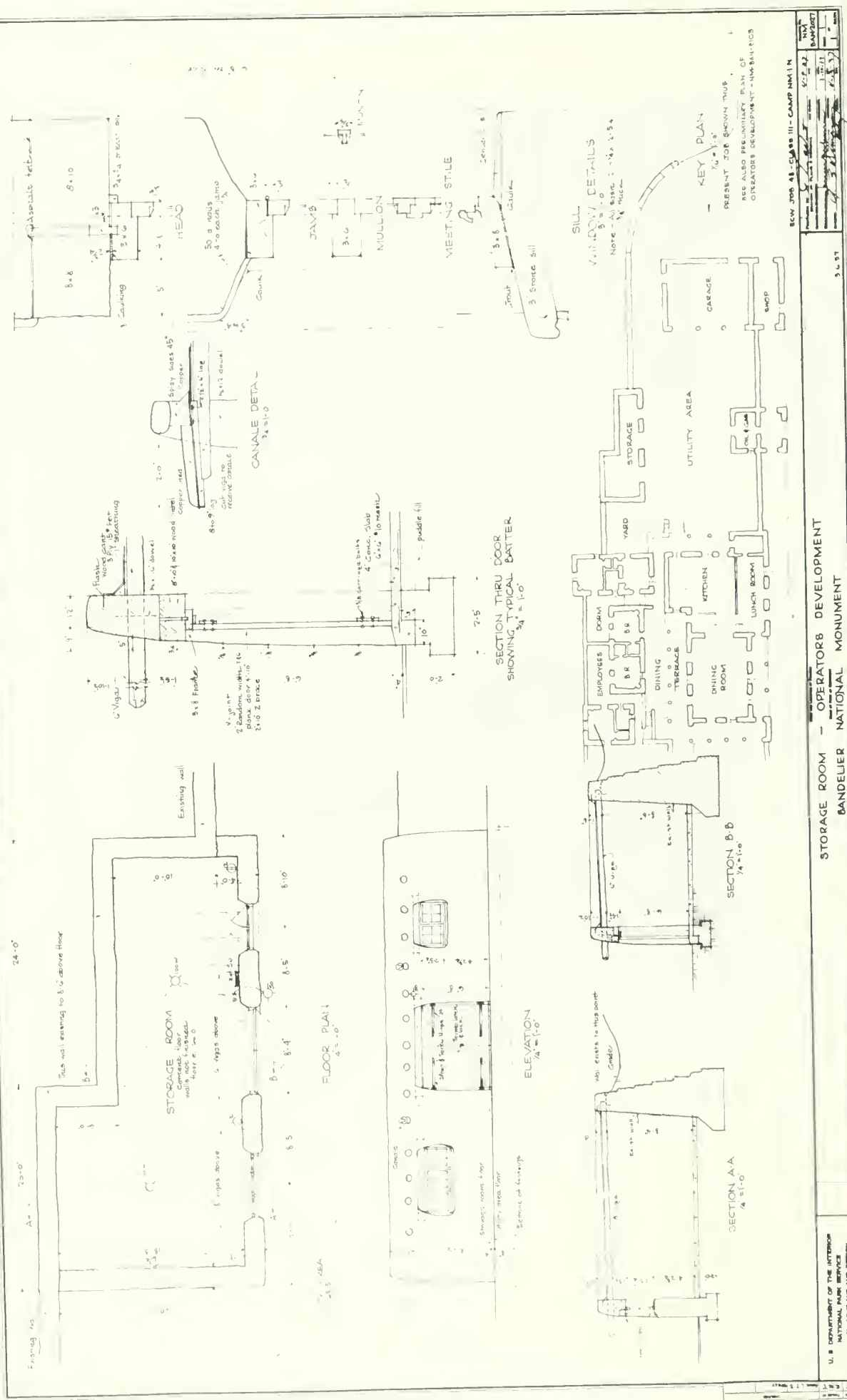


Figure 86. Plans for the storage building (B-12), 1937 (drawing 315/2027, sheet 1).



Figure 87. B-12, the storage building, was constructed in 1937 as a work space for the CCC carpentry crew. Mrs. Frey later used the building as a laundry. This photograph depicts the building shortly after its construction and before its receipt of plaster coat. (Photo: Bandelier)



Figure 88. In 1982 the storage building looked much the way it looked in the 1930s. (Photo: Harrison for NPS)

B-13, Garage

This garage (figure 89) was constructed in 1937 to house lodge vehicles and to provide space for minor automobile repairs for lodge guests. The three-bay garage originally had tuff gravel floors, and the small attached shop had concrete floors.¹²⁶ One stall of this garage was converted to a wood storage area for the lodge in 1939.¹²⁷ A concrete pad was poured in the garage section in recent years. Windows and smaller doors have been cut into the original doors in the garage bays. An interesting aspect of this structure was that it was designed with two fronts. The functional front of the garage faces the lodge utility area (figure 90), and the shop entrance (figure 91) faces the plaza. The plaza facade is connected to B-14, the lodge gas and oil house, by a portal with a solid back wall, making the two buildings seem like one structure. The building received a new foam roof in 1981 and new natural gas service in 1983. When building use changed to a training facility, a bathroom and kitchen were added in 1984.

Richard W. Thompson designed the building.

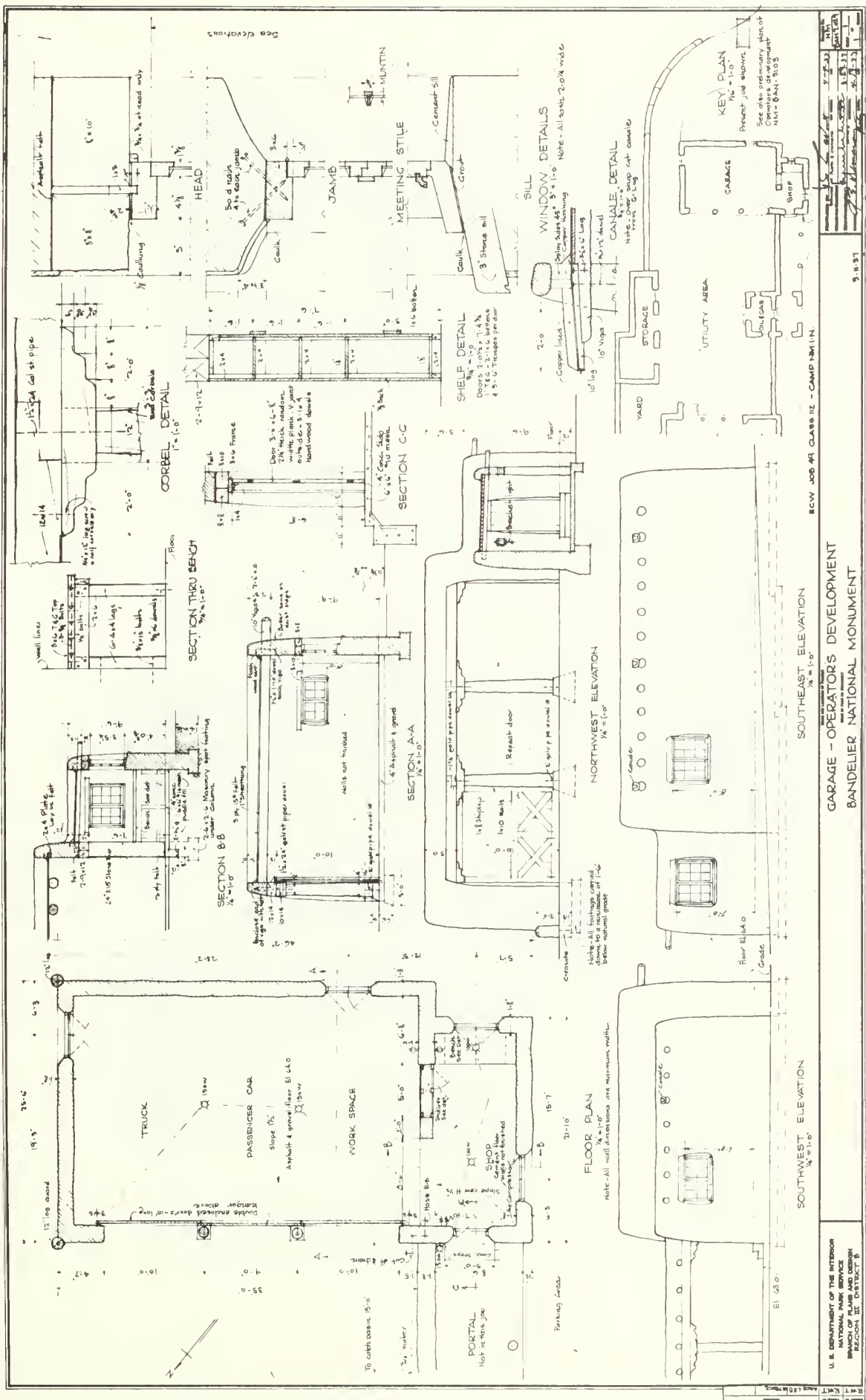


Figure 89. Plans for the garage (B-13), 1937 (drawing 315/2029, sheet 1).



Figure 90. B-13, the garage of Frijoles Canyon Lodge, was a simple structure that housed lodge vehicles and a small repair service. This photograph, taken from the courtyard of the lodge utility area, shows the building shortly after construction but before exterior plastering. (Photo: Bandelier)



Figure 91. This photograph, taken from the plaza elevation, shows B-13 on the right and B-14 on the left. A portal connects the two buildings. Note how the two buildings look like one building. (Photo: Harrison for NPS)

B-14, Gas and Oil House

Constructed as the gas and oil house for the lodge development, the building (figures 92 and 93) was probably used by the CCC until it was assigned to Mrs. Frey, the concessioner, in 1939.¹²⁸ An open area under the portal housed the gas pump. An old Conoco gas pump that may be original to the structure remains under the portal on a concrete pad. The original location of the gas pump was approximately 4 feet from its present location on the plaza. The oil and grease room, built facing the lodge utility area, contained built-in shelves anchored into the stone masonry. The building's function changed to office storage in 1976. The building received a foam roof in 1981 and rewiring in 1984.

Richard W. Thompson designed the building.



Figure 92. B-14 is on the right. Sand was spread on the ground near the gas pump (hidden under the portal) to absorb any gas spills. Hugh Miller took this photograph in the summer of 1940. (Photo: Bandelier)

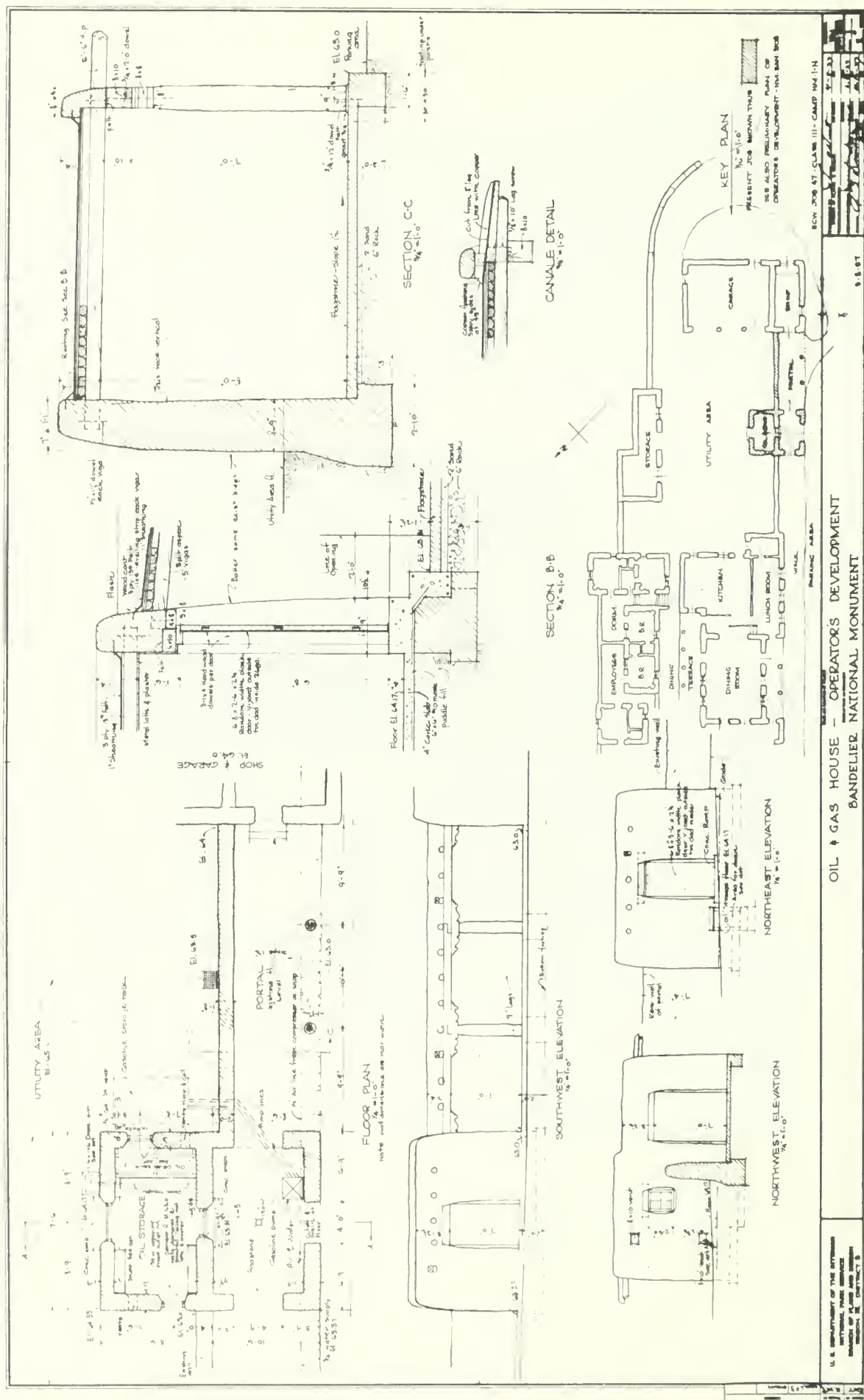


Figure 93. Plans for the gas and oil house (B-14), 1937 (drawing 315/2028, sheet 1).

B-15, Dining Room, Kitchen, and Lunchroom

In 1937 the CCC constructed this building as the dining room, kitchen, and lunchroom for the lodge (figures 94-96). On the north of the structure sat a dining terrace. The north wall of the terrace had an adobe-colored cement plaster to keep the plastered stone banco on that wall clean.¹²⁹ The terrace had a screen for a roof covering. Two strips of screen sewn together with copper wire served as the roof. The "entire width [of the screen was] stretched and nailed to strops at edges and turns only."¹³⁰ The back porch of the kitchen – a portal that led to the lodge utility area – received screens in 1954. At that time, the maintenance staff constructed a fly-proof, screened garbage-can rack.¹³¹ In 1960, the dining terrace was covered with a fiberglass roof.¹³² Other changes to the building before 1968 were minor. The concessioner periodically changed and updated kitchen equipment. Vinyl tiles replaced the rubber tiles in the kitchen. The concessioner also repainted the kitchen and performed general maintenance.¹³³

NPS took over management of this building in 1968 and turned it into the monument's administrative offices. The monument staff partitioned the kitchen into office spaces. The staff also removed the lunchroom counter and made that area into offices. The dining room became a general meeting room. The staff removed the dining room furniture and put it in curatorial storage. CCC-vintage couches and chairs from elsewhere in the monument were brought in. The terrace received an insulated roof. The roof connected B-15 with B-16, the former employee dormitory, and made it one large split-level office building. One corner of the dining terrace was also partitioned into small offices closing off the courtyard opening. The remainder of the terrace became the room.

The building was originally heated with oil, but the change was made to natural gas in 1968. Recent changes to the building include a new foam roof (1981), new sewer and water lines (1983), new wiring and natural gas line (1984), and a new furnace (1984).



Figure 94. In 1937, B-15 was under construction. The main dining room was behind the portal. The lunchroom was behind the three windows on the right. (Photo: Bandelier)



Figure 95. The main entrance of B-15 had decorative doors, and it was large enough that the visitor quickly realized the building's importance. (Photo: Bandelier)

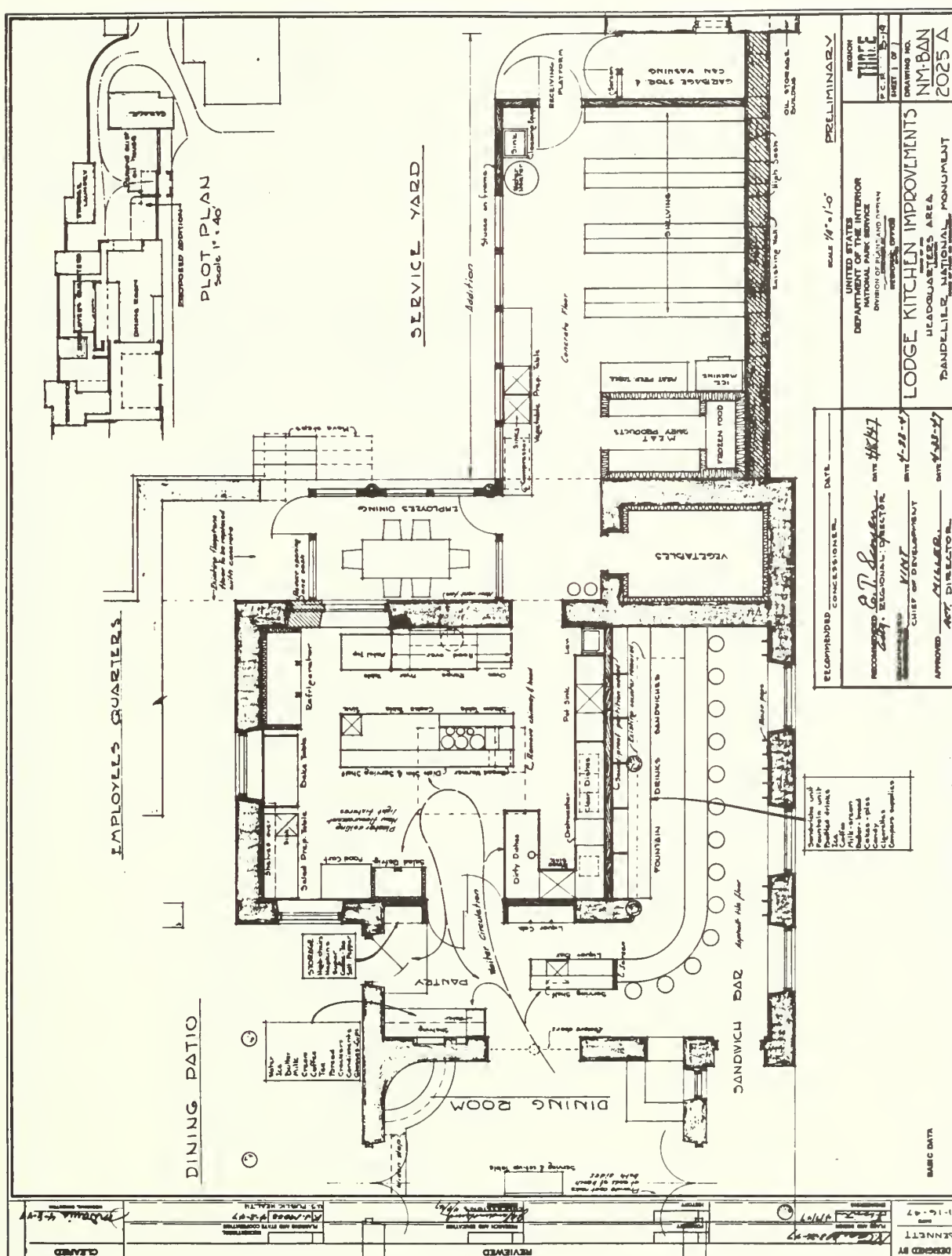


Figure 96. Plans for kitchen improvements, 1947.

B-16, Employee Dormitory

This dormitory housed employees for Frijoles Canyon Lodge. The structure was built in 1938 directly behind the dining room, stepped up from the dining terrace and banked into the hillside (figures 97-99). The building had five dormitory rooms, each equipped with a sink with hot and cold water.¹³⁴ Men's and women's rest rooms with toilets, showers, and sinks were on opposite ends of the building. The rooms were placed around an exterior terrace with a retaining wall against the hillside. Rooms had wall finishes of hard plaster painted with "Spanish White Texolite."¹³⁵ Windows facing the adjacent structure – B-15 – had metal sash with clear wire glass instead of the usual wooden sash, as a fire precaution (either Truscon or Fenestra standard casement sash with 1/4-inch clear wire glass).¹³⁶ The rooms were heated with oil-burning stoves.¹³⁷

Little change was made to the structure other than maintenance until NPS took it over and converted it into offices in 1968. At that time, natural gas heaters and gas lines were installed in the building. The terrace at the back of the building was enclosed at a later date and made into additional office space (figure 100). More recent changes include a new foam roof (1981), new sewer and water lines (1983), and new wiring and natural gas lines (1984).

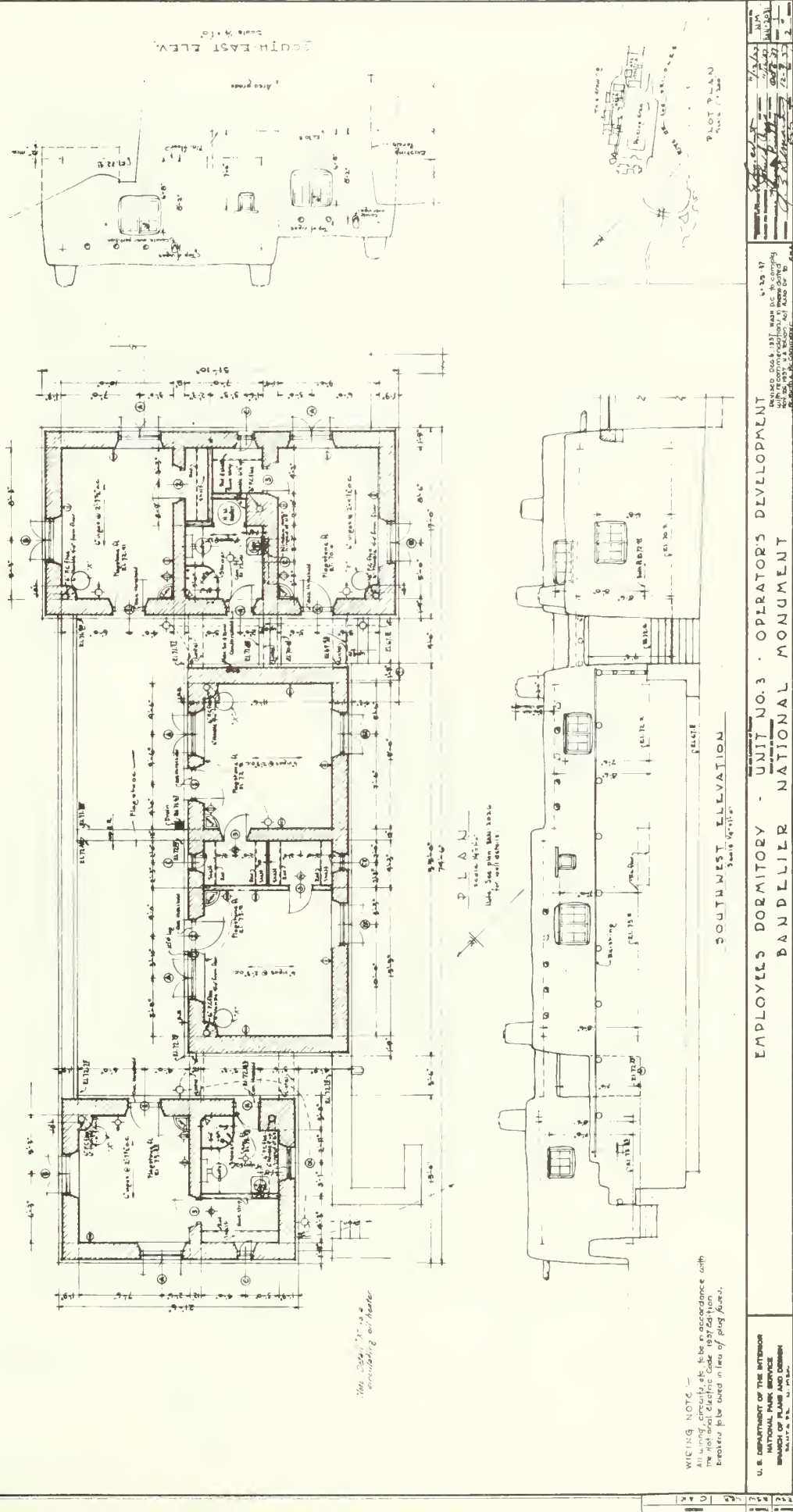


Figure 97. Plans for the employee dormitory (B-16), 1937 (drawing 315/2031, sheet 1).

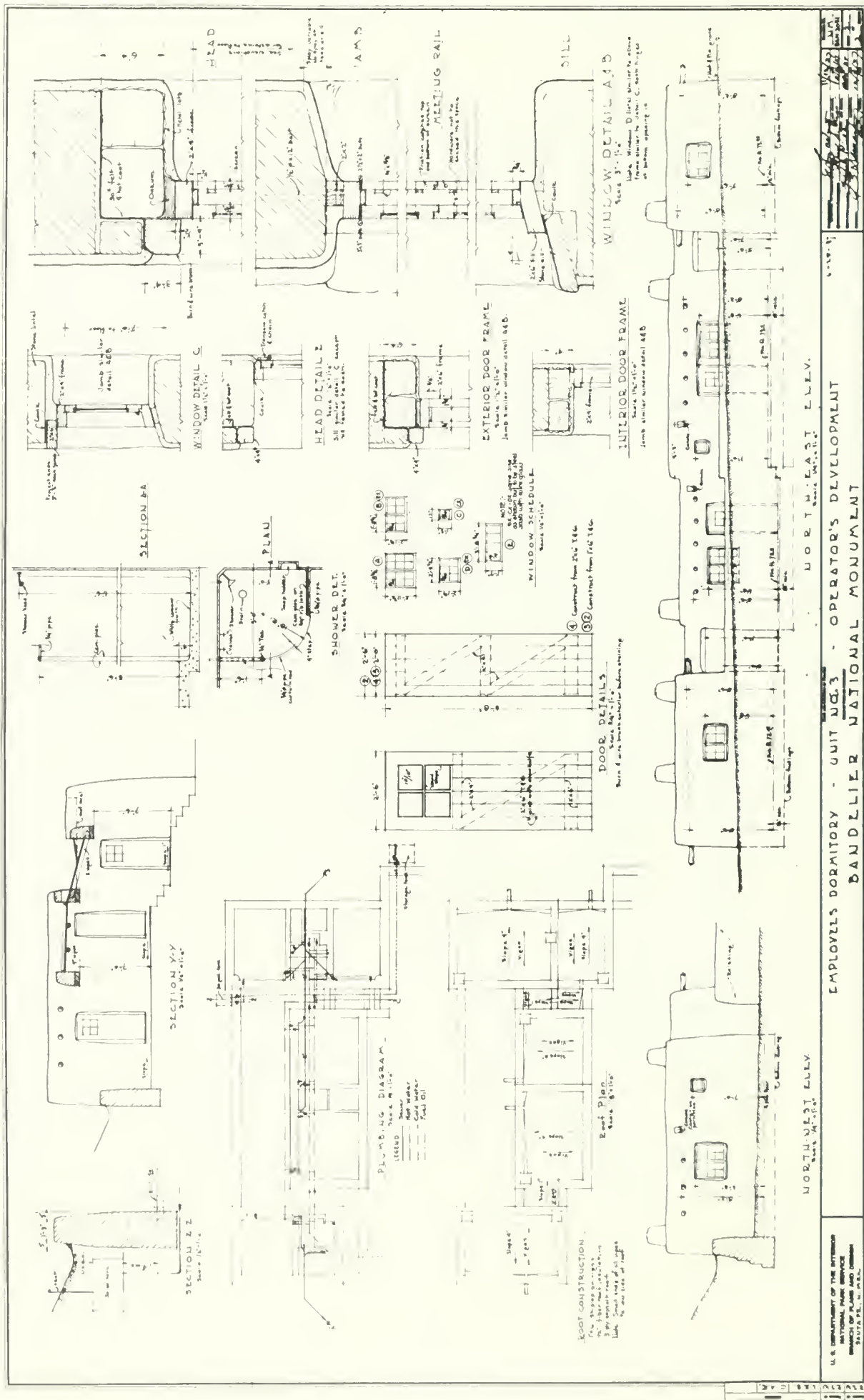


Figure 98. Plans for the employee dormitory (B-16), 1937 (drawing 315/2031, sheet 2).



Figure 99. The employee dormitory (B-16), shown here in 1937, housed workers for Frijoles Canyon Lodge. The dormitory sat on the talus slope directly above the dining room (B-15). (Photo: Bandelier)



Figure 100. This photograph of the rear elevation of B-16, taken in 1984, shows how the former terrace was enclosed to create additional interior space. (Photo: Copeland for NPS)

B-17, Lodge Lobby and Salesroom

Constructed in 1939, this building contained a salesroom, a lobby (figures 101 and 102), and a small writing room (figure 103). The salesroom, where Mrs. Frey sold local Native American crafts, had plate glass showcases on three sides. The lobby was filled with CCC-built furniture, such as couches, chairs, tables, smoking stands, and lamps. Access to the lobby was through a walled courtyard that led to the salesroom from the main courtyard (figure 104). The building was originally heated by the large fireplace, which had a built-in Heatilator.¹³⁸ Auxiliary heat was provided by a small fireplace at the opposite end of the lobby and a Superfex Heat Projector Model 105 space heater.¹³⁹

In 1968, the former salesroom was remodeled into a snack bar to take the place of the old lunchroom in B-15. The lobby and writing room were turned into a souvenir shop. Physical evidence indicates that the original ceiling in the present-day snack bar was herringbone-pattern latias and that the coved plaster was a more recent addition. The building received a new foam roof in 1981, new sewer and water lines in 1983, and new wiring and gas lines in 1984. In 1982, a wall was added to create an office next to the souvenir shop. In 1987 the concessioner remodeled the snack bar.

Robert W. Albers designed the building. The 1939 heating plan was designed by Ken Saunders. Norm Harp designed the 1968 interior changes.

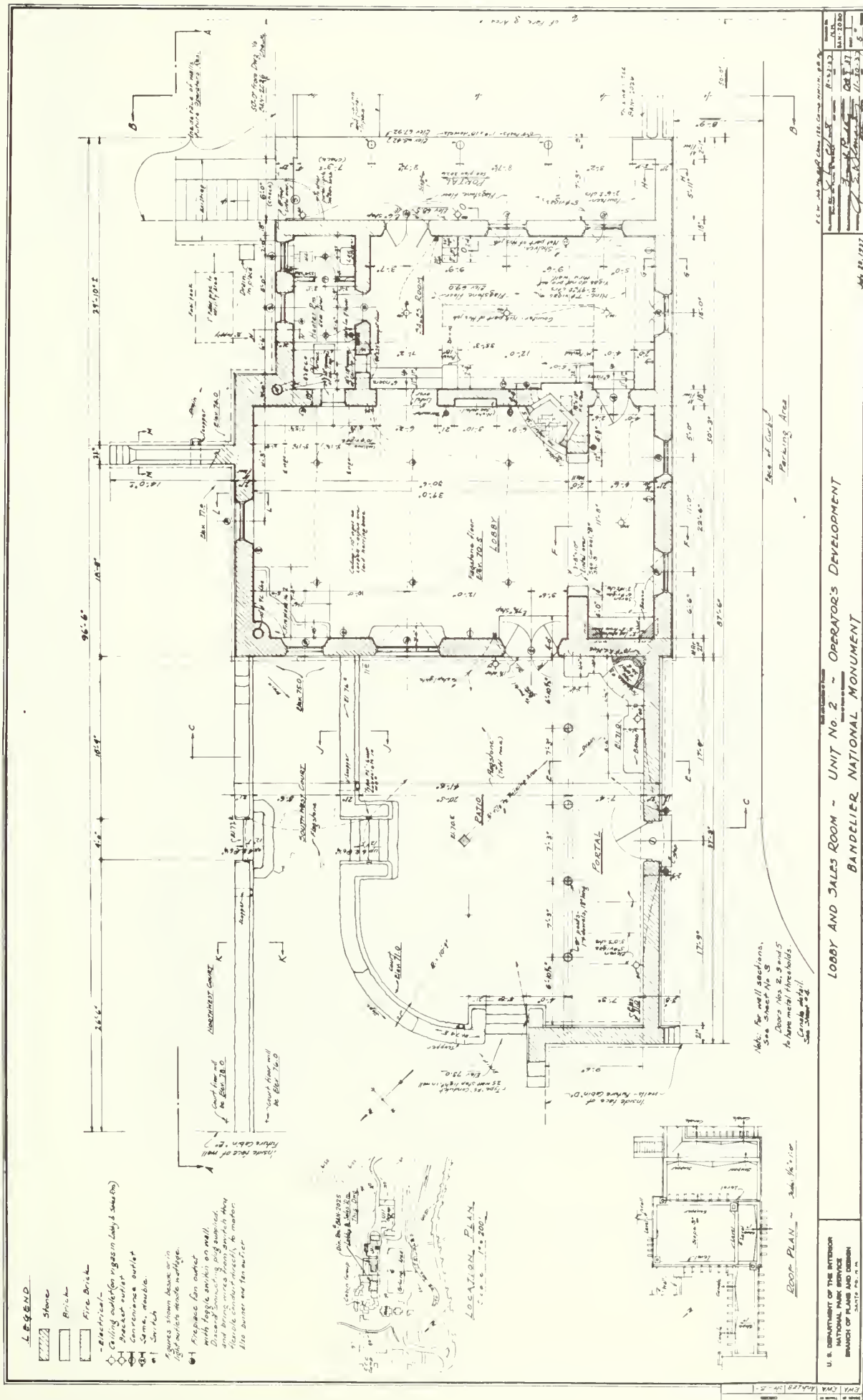
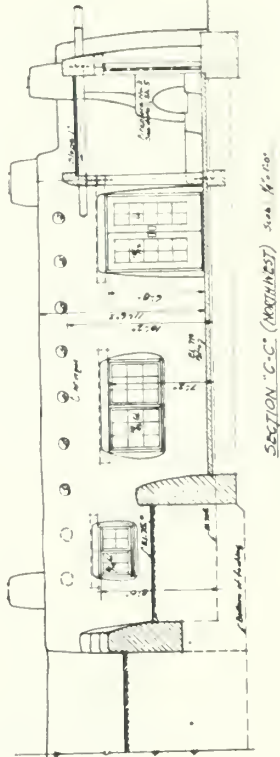
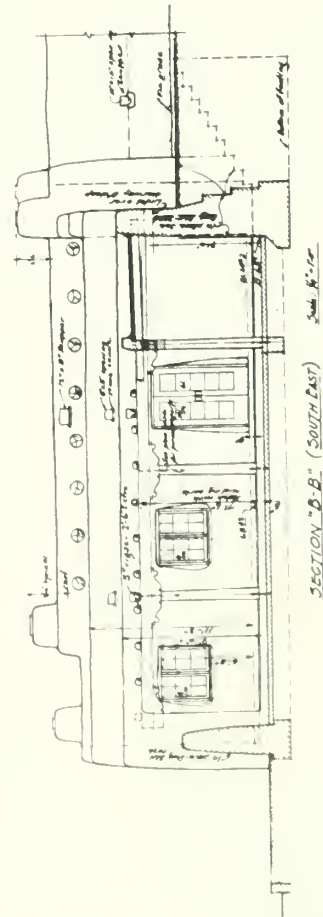
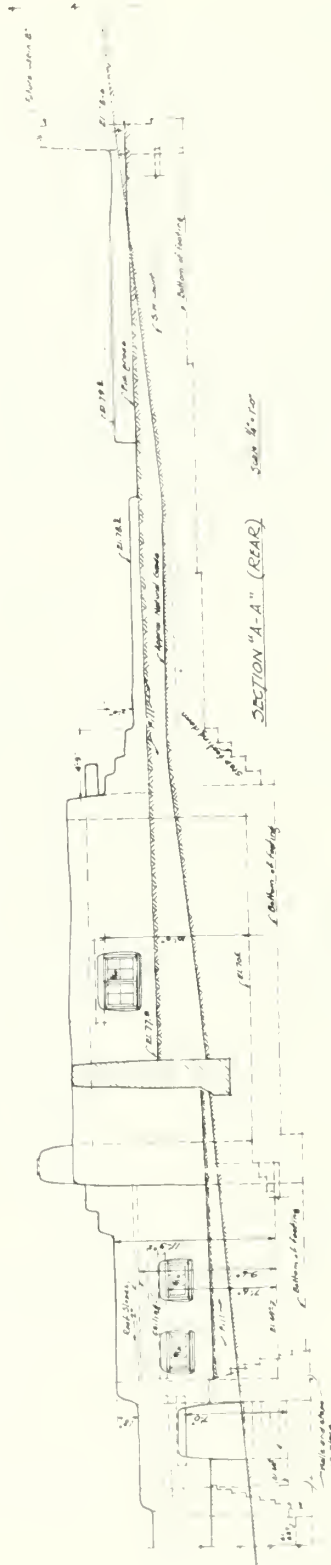
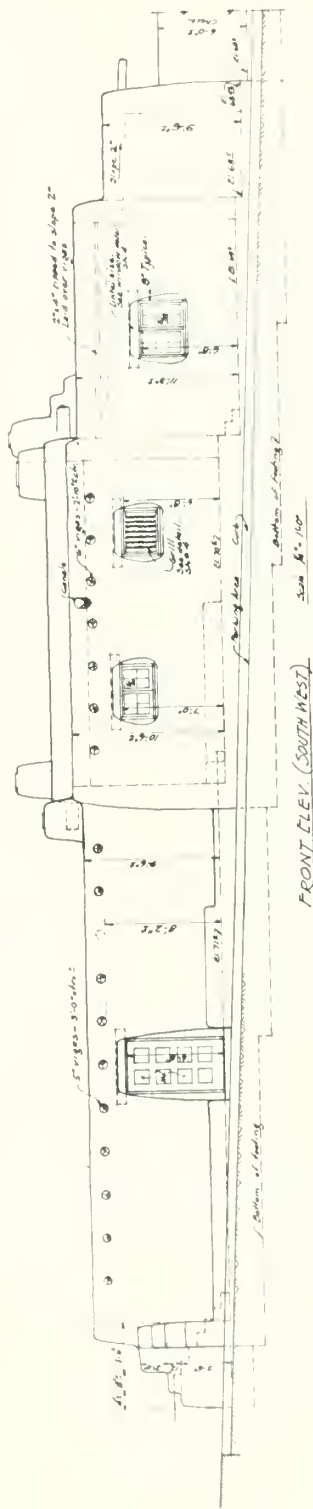


Figure 101. Plans for the lodge lobby and salesroom (B-17), 1937 (drawing 315/2030, sheet 1).



| | |
|----------|--------------|
| DATE | 1-17-37 |
| BY | J. B. B. |
| CHECKED | J. B. B. |
| APPROVED | J. B. B. |
| SCALE | 1/4" = 1'-0" |

LOBBY AND SALES ROOM - UNIT No. 2 - OPERATOR'S DEVELOPMENT
BANDELIER NATIONAL MONUMENT

U. S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
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Figure 102. Plans for the lodge lobby and salesroom (B-17), 1937 (drawing 315/2030, sheet 2).



Figure 103. Nearly all period hotels in national park areas had writing rooms. At Frijoles Canyon Lodge the writing room (to the right) was adjacent to the lobby. This interior photograph of B-17 dates from 1939. (Photo: Bandelier)



Figure 104. The courtyard created an intimate space that served as an additional public room during good weather. (Photo: Bandelier)

B-18, Operator's Residence

This building (figures 105-107) was designed as the residence for the concession operator, Mrs. Evelyn Frey. The building was constructed in 1938 and assigned to Mrs. Frey on January 1, 1939.¹⁴⁰ The structure had two bedrooms, a living room, a kitchenette, a bathroom, and a basement. The building was heated by two fireplaces and an oil furnace in the basement. The kitchenette had a gas-operated refrigerator and a propane stove.¹⁴¹ The architect banked this building into the hillside with the basement level containing the furnace room and storage, and the upper level containing the living quarters. Access to the structure was provided by a small gateway off the main lodge courtyard and a set of steps up to the residence entrance. The interior was repainted in 1945 and 1960, and the bathroom was "refinished" at that time, although no further details were given. A new oil furnace was installed in 1959.¹⁴² In recent years the building has received a skylight (figure 108), a new foam roof, new wiring, and replacement water, sewer, and natural gas lines.

Robert W. Albers designed the building.

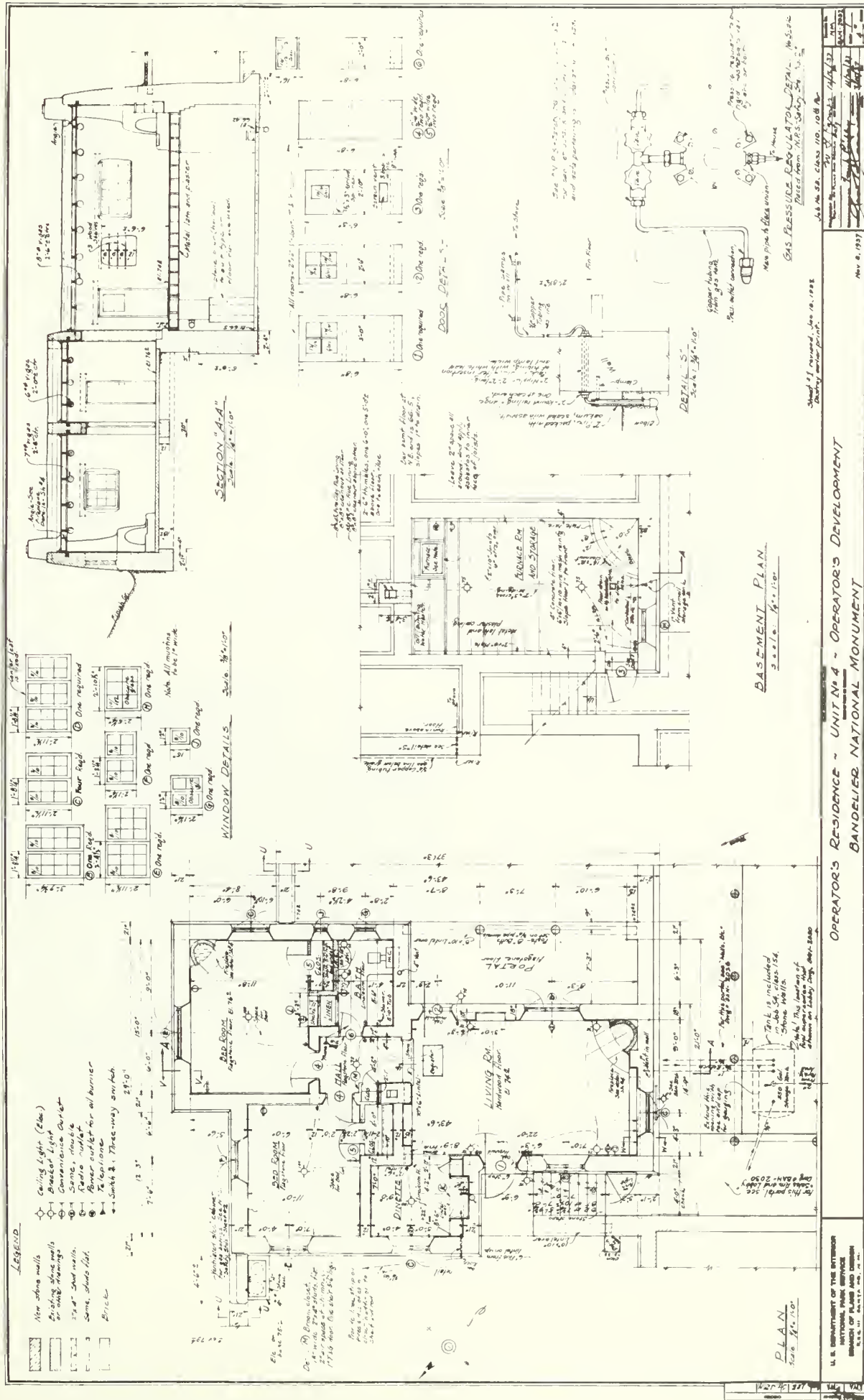
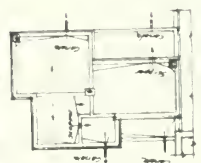
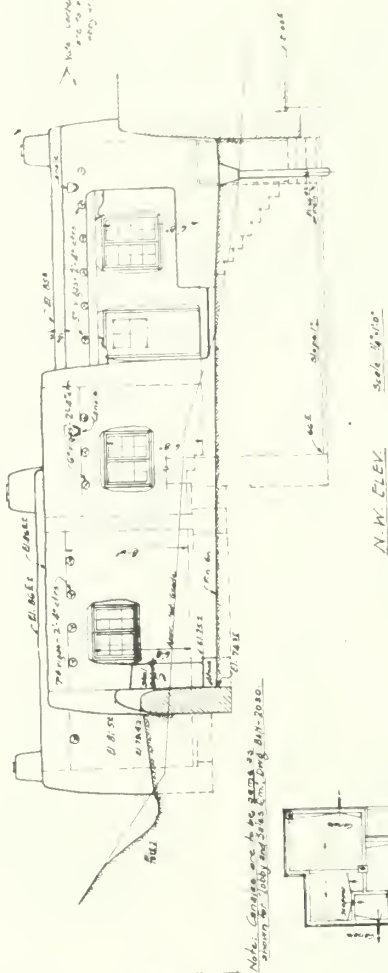
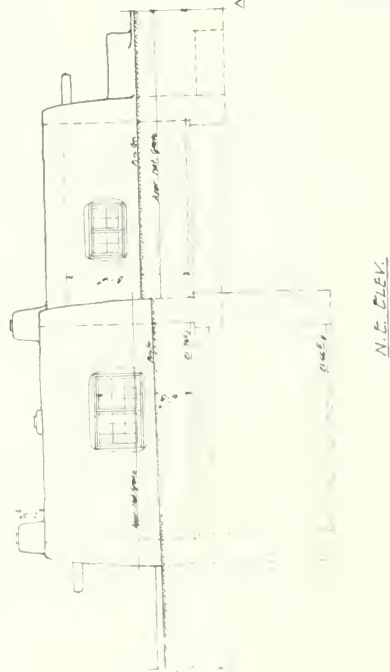
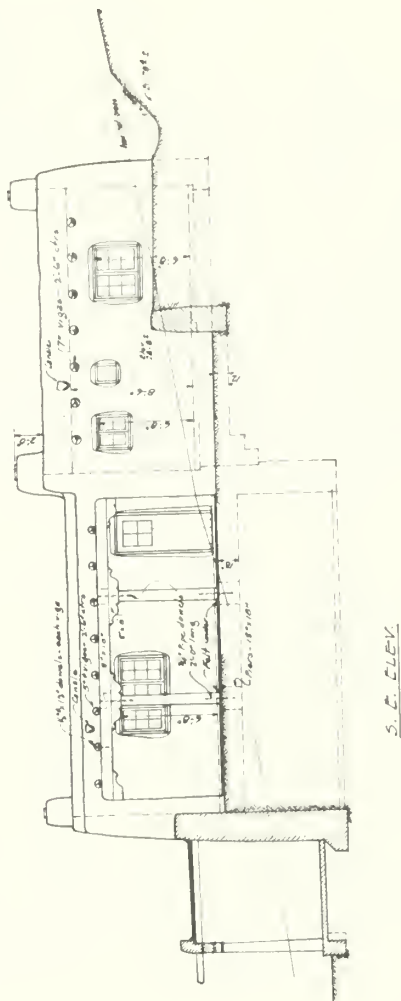
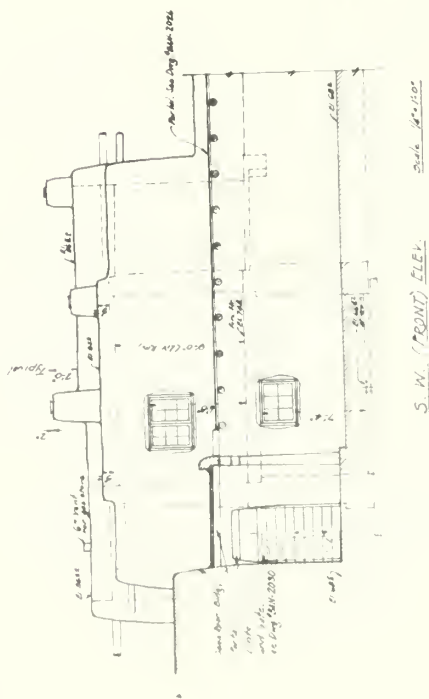


Figure 105. Plans for the operator's residence (B-18), 1937 (drawing 315/2032, sheet 1).



Sheet 2, revised, Jan 18, 1938
Drawing number 315/2032

| DATE | BY | REVISION |
|----------|------------|----------|
| JAN 1937 | W. B. DODD | 1 |
| JAN 1938 | W. B. DODD | 2 |
| JAN 1938 | W. B. DODD | 3 |
| JAN 1938 | W. B. DODD | 4 |
| JAN 1938 | W. B. DODD | 5 |
| JAN 1938 | W. B. DODD | 6 |
| JAN 1938 | W. B. DODD | 7 |
| JAN 1938 | W. B. DODD | 8 |
| JAN 1938 | W. B. DODD | 9 |
| JAN 1938 | W. B. DODD | 10 |
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| JAN 1938 | W. B. DODD | 12 |
| JAN 1938 | W. B. DODD | 13 |
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| JAN 1938 | W. B. DODD | 90 |
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| JAN 1938 | W. B. DODD | 92 |
| JAN 1938 | W. B. DODD | 93 |
| JAN 1938 | W. B. DODD | 94 |
| JAN 1938 | W. B. DODD | 95 |
| JAN 1938 | W. B. DODD | 96 |
| JAN 1938 | W. B. DODD | 97 |
| JAN 1938 | W. B. DODD | 98 |
| JAN 1938 | W. B. DODD | 99 |
| JAN 1938 | W. B. DODD | 100 |

OPERATOR'S RESIDENCE - UNIT N. 4 - OPERATOR'S DEVELOPMENT
BANDELLER NATIONAL MONUMENT

U. S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
BRANCH OF PLANS AND DESIGN

Figure 106. Plans for the operator's residence (B-18), 1937 (drawing 315/2032, sheet 2).



Figure 107. The courtyard next to the lodge lobby (B-17) is on the left. B-18, Mrs. Frey's residence, is the two-story building on the right. (Photo: Bandelier)



Figure 108. This 1984 photograph of Mrs. Frey's living room in B-18 shows the nonhistoric skylight. (Photo: Copeland for NPS)

B-19, Cabin Group A

This was the first of the lodge units constructed (figures 109-111). Built in 1939, the structure contained four rooms and two shared bathrooms. The project completion report noted that the units were equipped with hot and cold running water, and tub-shower combinations. It also noted that "the rooms are heated with fireplaces of the steel shell type from which warm air is ducted for efficient warm air circulation . . . auxiliary oil stove installation in a small heater room directly in front of the bathroom entrance is provided. By means of wall registers heat from the oil stove unit is furnished each two rooms and the bath."¹⁴³ Oil for the stove was from a 5-gallon tank located in a small closet on the front elevation. The building was constructed on four levels, responding to the topography. These four lodge units were converted into two units of employee housing, probably in 1974 and 1978. A kitchenette was added to each of the two units at that time. The building received a new foam roof in 1981, new water and sewer lines in 1983, and new wiring and natural gas lines in 1984.

The original paint schedule for this building called for the following: "Floors: oil finish, brown color. Cement base: flat oil paint color no. 358. Walls: casein paint – Spanish white. Lavatory niche: gloss oil paint, color no. 1009. Bath: north and west walls: gloss oil paint color no. 413. South and east walls: gloss oil paint color no. 633. Cement base: same as rooms. Ceilings: casein paint, color no. 907."¹⁴⁴ Lyle Bennett based his paint schedule on a German system entitled "Bauman's—Neve Farbenton Karte—System Prase—B.R.E.G.M.—Block No. 1." Bennett acquired the box of color cards from Germany through an advertisement in the architectural magazine *Pencil Points*.¹⁴⁵

Robert W. Albers designed the building known as cabin group A, or rooms 1-4.

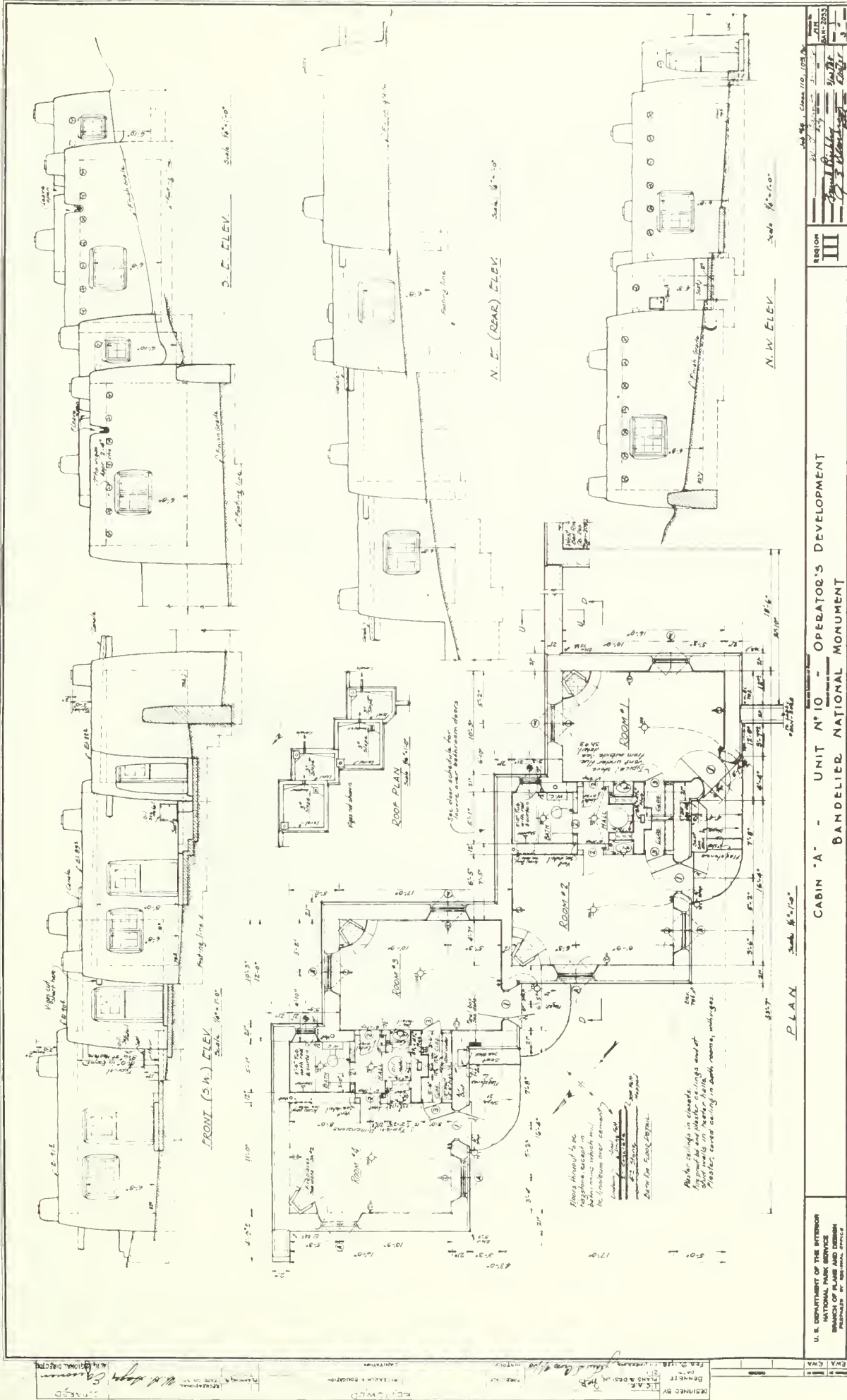


Figure 109. Plans for cabin group A (B-19), 1938 (drawing 315/2033, sheet 1).



Figure 110. The blocky masses of the building forms and the small changes in elevation contributed to the pueblo revival character of Frijoles Canyon Lodge, shown here in the late 1930s. The spatial arrangement created dramatic interplay between light and shadow. (Photo: Bandelier)



Figure 111. Built in 1939, cabin group A (B-19) was the first of the lodge units constructed. Shown here in 1942, the group contained four guest rooms and two shared bathrooms. (Photo: Bandelier)

B-20, Cabin Group B

This building (figures 112 and 113) was constructed in 1938 and turned over to Mrs. Frey on January 1, 1939. The building contained four lodge units and two shared bathrooms. The painting schedule for this building was as follows: "Floors: oil finish, brown color. Cement base: flat oil paint color no. 358. Lavatory niche: gloss oil paint color no. 636. Bath: cement base: flat oil paint color no. 358. Walls: gloss oil paint, three equal width horizontal bands color no. 414 bottom, no. 413 middle, no. 412 top. Ceiling casein paint color no. 633. Portal: casein paint color no. 466 for wall. Base: casein paint color no. 404. Base height 16 inches."¹⁴⁶ Bennett based his paint schedule on the German system entitled "Bauman's – Neve Farbenton Karte – System Prase."

Originally, the hot water for this building was furnished from the lodge's central hot-water heating plant in B-21. In recent years, the four lodge units were modified into two apartments for park employees by the addition of kitchenettes. A new gas hot-water heating system was added to each apartment at that time.¹⁴⁷ Maintenance records did not specify the date of these changes, but it was probably 1978. The building received a new foam roof in 1981, new water and sewer lines in 1983, and new wiring and natural gas lines in 1984.

Lyle E. Bennett designed the building.

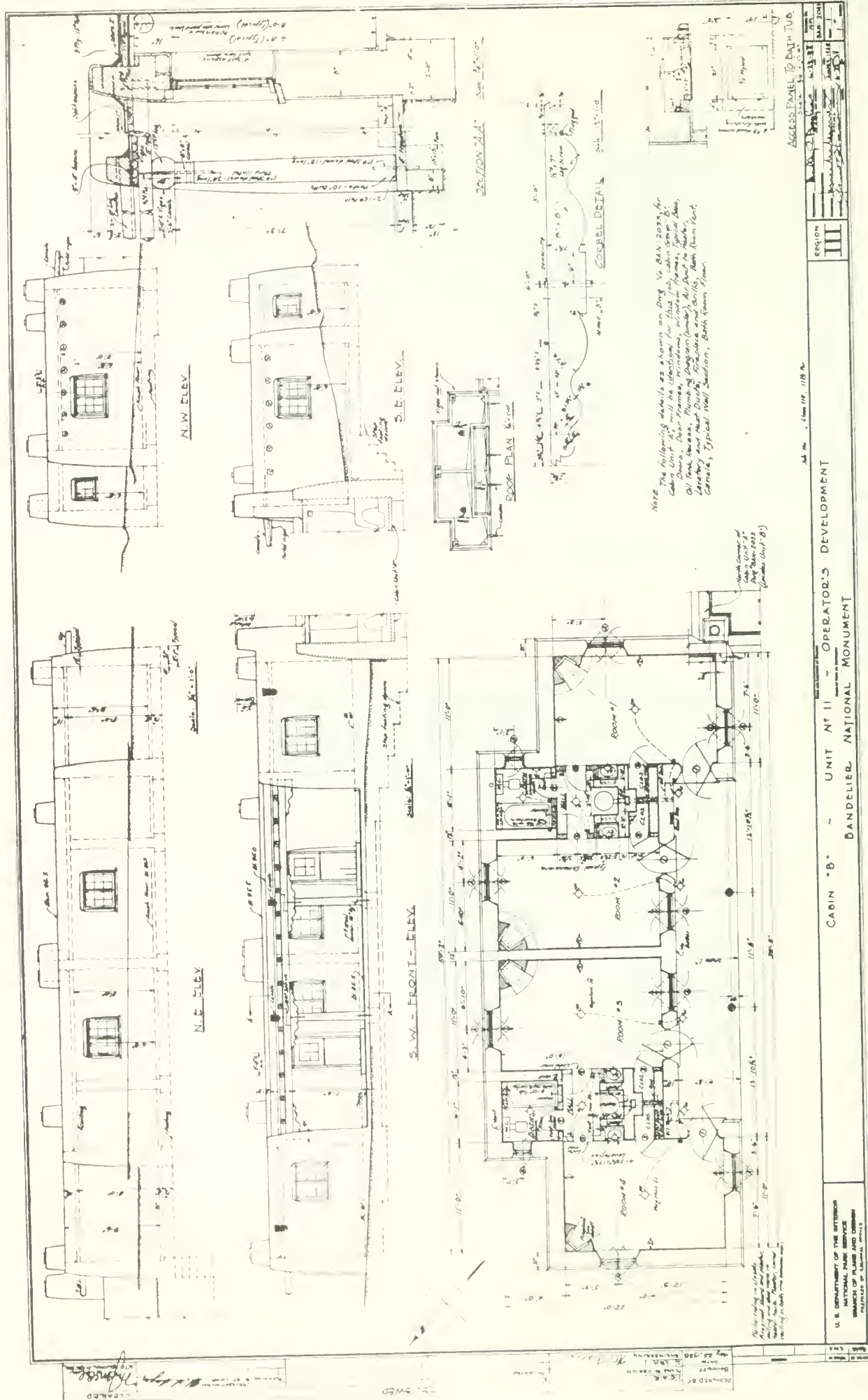


Figure 112. Plans for cabin group B (B-20), 1938 (drawing 315/2041, sheet 1).



Figure 113. This photograph shows B-20 in 1940 (center). B-24 is to the left, B-21 is the round structure to the right, and B-23 is in shadow on the far right. The layout created a village atmosphere. (Photo: Bandelier)

B-21, the "Kiva"

The CCC constructed this building (figures 114-117) in 1938-39 as the comfort station for the lodge development. The basement contained the central heating unit for the lodge's hot-water system and cedar-lined closets for the lodge linen storage. A utility room with an oil-burning stove separated the men's and women's rooms on the main floor. Hot air passed through wall registers to heat the building. The electric lights in the building were wired with an automatic time clock that turned the lights off when the building was not in use.¹⁴⁸

The building's paint schedule was fairly complex:

Linen and heater rooms: ceilings and upper walls to top of closet casein paint – ivory color. Linen closet and walls to height of linen closet including work table gloss or semi-gloss washable oil paint color similar to 526 for toilet rooms. Doors painted inside and out after fitting. Shelving stained light brown, finished with boiled linseed oil, dryer thinned as required. Stain may be added to first coat linseed. Cedar lining left natural. Floors: Dehydrative tinted orange-brown, similar to other floors. Color and thinner in first coat only. Base: oil paint preferably gloss to height of cabinet base – color to match floor. Plumbing and Pipes oil paint, gloss, grey color. Toilet rooms: Floors: varnish type penetrating oil, color similar to 965. Base: gloss oil paint – color to match no. 404, height shown on plans. Include pipe support to toilet stalls. Walls, toilet stalls, utility room door: semi-gloss oil paint, color to match no. 526. Ceiling and toilet stall walls above partitions, including upper pipe support to stalls: flat oil paint or casein color no. 630. Oil paint preferred on metal; casein paint preferred on plaster. Vigas, lintels, entrance door: stain similar to other existing work. Skylight frame: oil paint color similar to 965. Interior of skylight to be painted with white lead and oil – white color. Exterior exposed wood to be primed with aluminum paint and finished with white lead paint tinted to match exterior plaster.¹⁴⁹

When the lodge ceased operations, the linen storage and comfort station functions were not needed. The building was turned into a small storage area circa 1978 and then modified into a laundry for residents in 1985. With the addition of hot-water heating in the individual units used as quarters, the use of the central boiler was discontinued. The building received a new roof in 1981 and again in 1985. Water and sewer lines were replaced in 1983, and wiring and gas lines were redone in 1984.

Lyle E. Bennett designed the building.

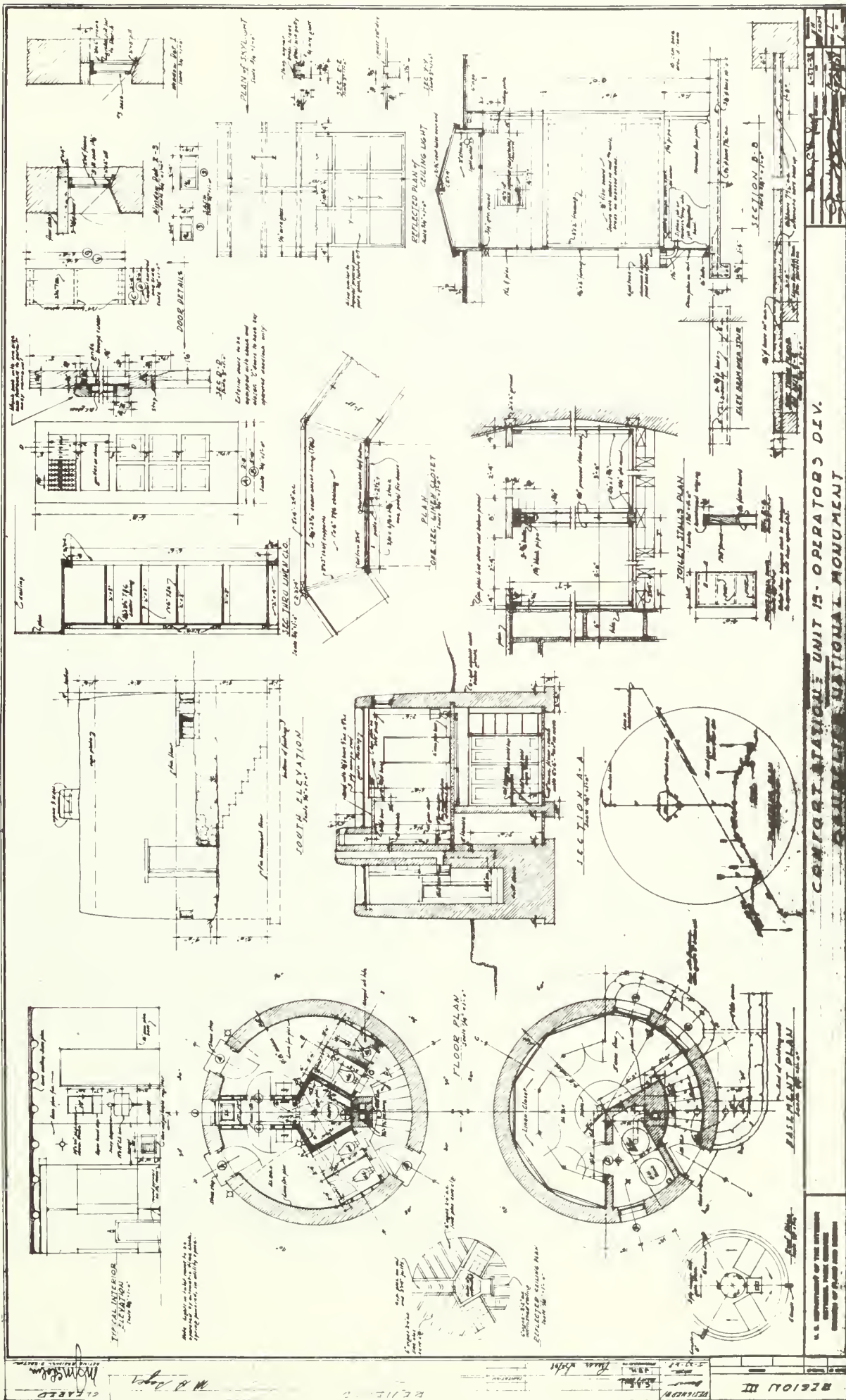


Figure 114. Plans for the comfort station (B-21), 1938 (drawing 315/2034, sheet 1).

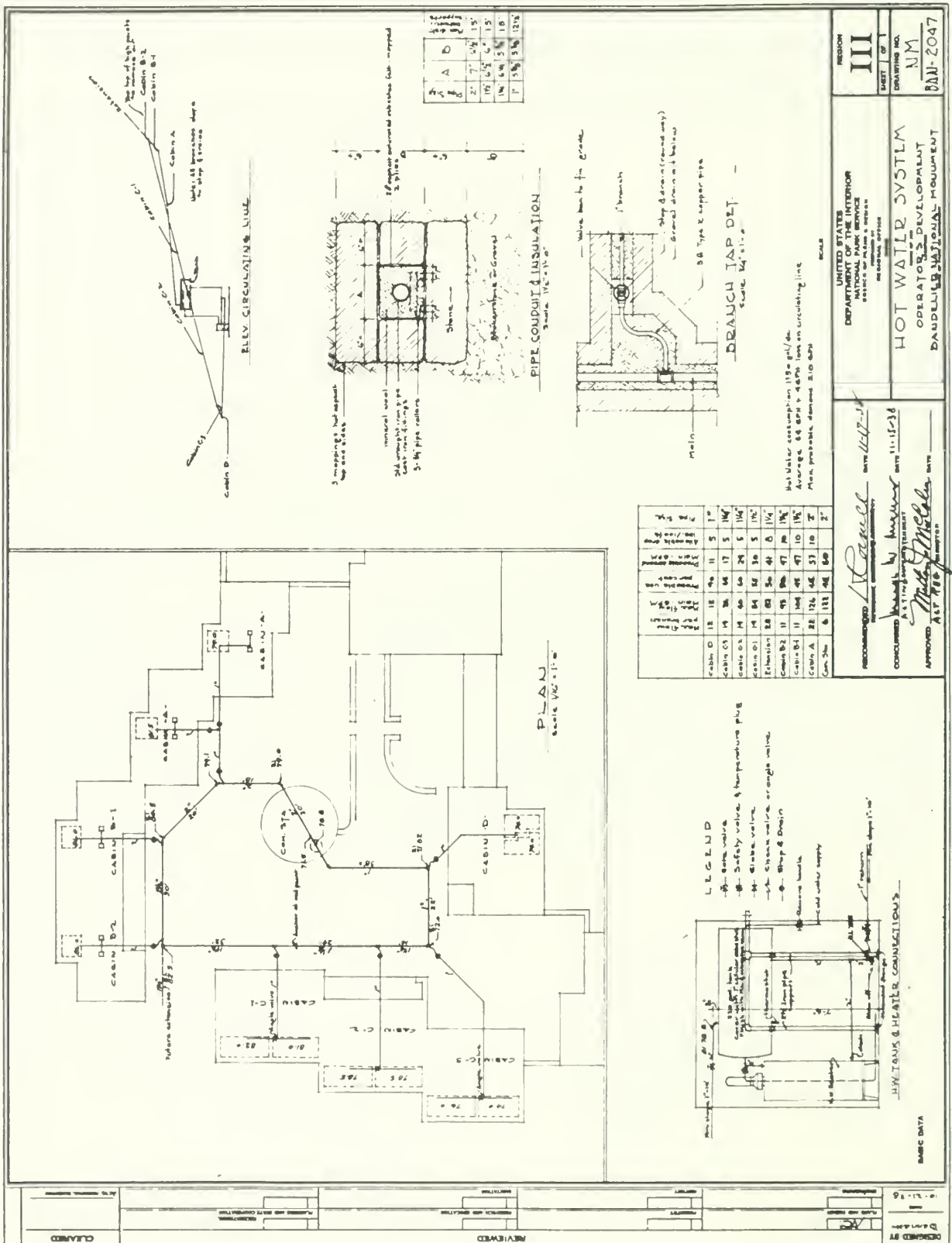


Figure 115. Plans for the hot-water distribution system for B-21 and the cabin units, 1938 (drawing 315/2047, sheet 1).



Figure 116. Although taller than most prehistoric and historic kivas, B-21 reflected architectural traditions indigenous to the area in its circular form. This photograph shows the building as it appeared shortly after construction. (Photo: Bandelier)



Figure 117. The function of the "kiva" has changed over time, but its form remains important to the surrounding architectural fabric. (Photo: Harrison for NPS)

B-22, Powerhouse

This building (figures 118-120) was constructed in 1938 and originally housed the generator for the park's electricity. The power plant was in operation by June 1, 1938, and the building's architect noted, "no objectionable noise is apparent in the public or residential areas . . . A relocation of the fuel tank from that shown on the plan was agreed to which was necessary for the best performance of the engine."¹⁵⁰ In about 1940, a General Electric 25-kilowatt lighting plant was obtained from War Department surplus and installed.¹⁵¹ An exhaust fan was added to the building in 1940 because of unspecified problems.¹⁵² The monument went on commercial power in 1948. New underground cables were added to the building in 1974, at which time the transformers were modified to meet electrical codes.

Lyle Bennett designed the powerhouse. The building was constructed outside the walled maintenance yard. It abutted the wall into the lodge utility area and on the road leading up to the park residences.

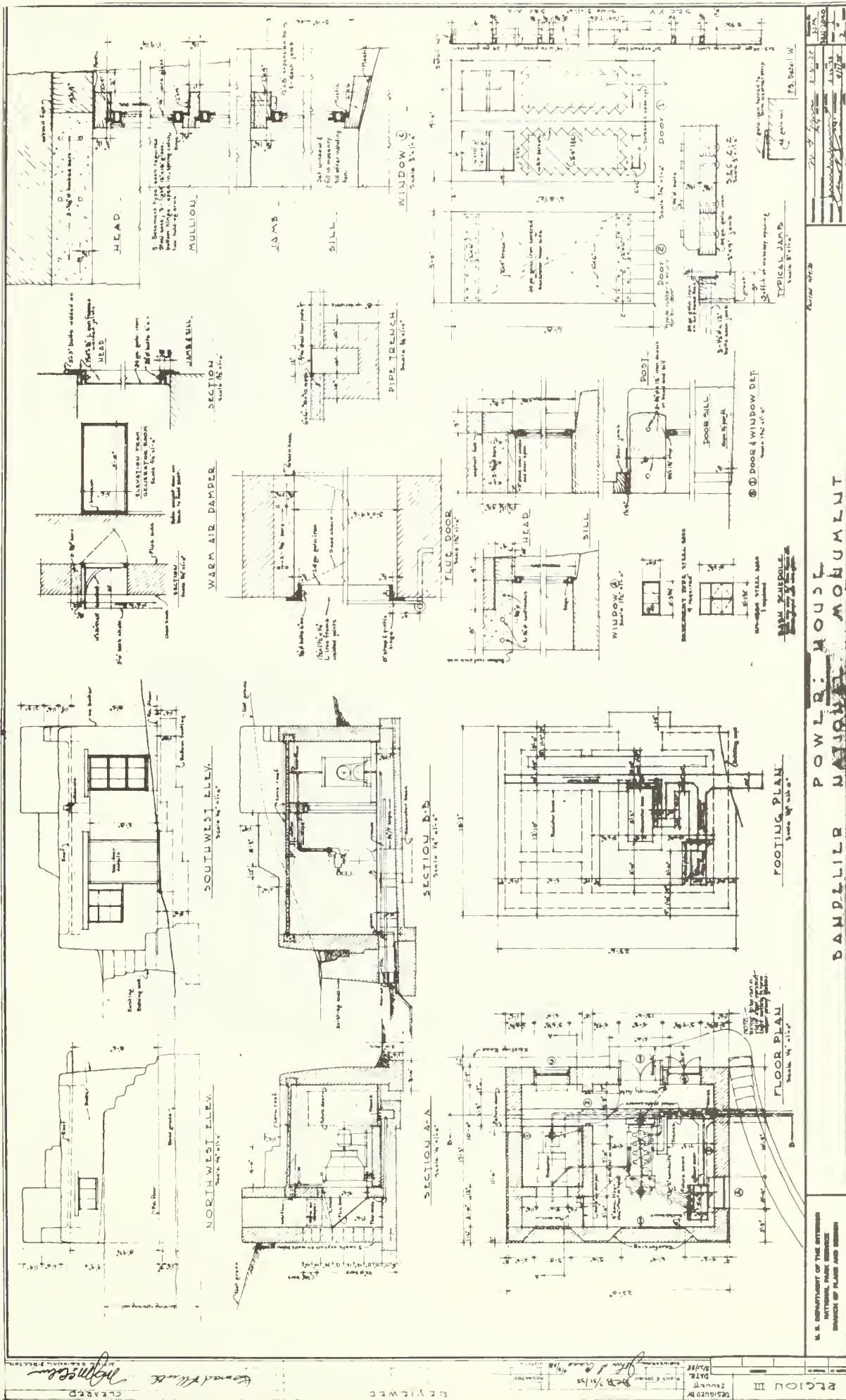


Figure 118. Plans for the powerhouse (B-22), 1938 (drawing 315/2040, sheet 1).



Figure 119. The powerhouse (B-22) is shown here in 1940. The building is a good example of the thoroughness of the monument's architectural program; it carried through to even the most utilitarian structures. (Photo: Bandelier)

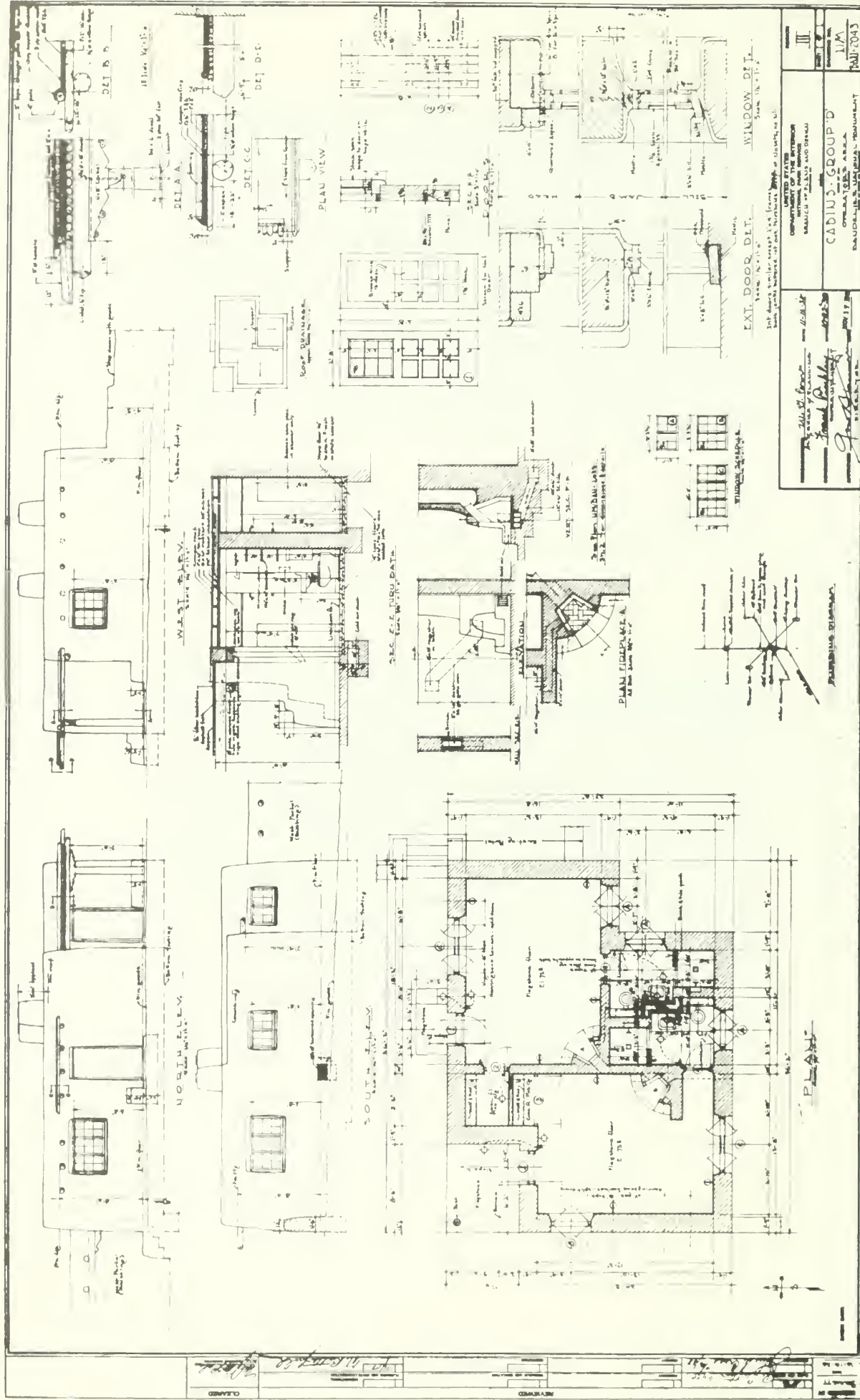


Figure 120. In 1982 the exterior of the powerhouse remained virtually unchanged from its original appearance. (Photo: Harrison for NPS)

B-23, Cabin Group D

This building (figures 121-123) was constructed in 1939 and housed two small cabin units, each with a separate bathroom. These bathrooms were equipped with showers, which turned into a maintenance problem over the years. In 1959 the showers were tiled in an effort to cut down on excessive maintenance costs.¹⁵³ These cabins were originally heated like the others – with fireplaces and small oil-burning stoves. A natural gas furnace (Williams/Sahara Model B28SD) was installed in each unit in 1965.¹⁵⁴ The buildings front the lodge compound and have windows overlooking the former plaza. Fluorescent lights were installed in B-23A in 1977. The building is now used for park offices. The building received a new foam roof in 1981. Water and sewer lines were replaced in 1983, and wiring and gas lines were replaced in 1984.

Lyle E. Bennett designed the building.



Figures 121. Plans for cabin group D (B-23), 1938 (drawing 315/2043, sheet 1).



Figures 122 and 123. The entrances to the cabin units of B-23, cabin group D, provided intimate transitional spaces between the exterior courtyard and the cozy interiors. (Photos: Bandelier)

B-24, Cabin Group C

This cabin group (figures 124 and 125) was originally designed with six cabin units, but only four were built. The lodge units were designed on similar plans, each with its own bathroom. The fireplaces in each unit vented and circulated hot air to the bathrooms.¹⁵⁵ A small gas furnace was added to each unit in 1965 and 1970. The two units at the north end of the building, connected by a portal, were made into office spaces when the lodge was turned over to the monument. The two units at the south end had kitchenettes added and became seasonal housing. Little else has been done to the buildings over the years other than painting, roofing, and general maintenance.¹⁵⁶ The roof was replaced in 1981. Water, sewer, gas, and electrical services were updated in 1983 and 1984.

Lyle E. Bennett designed the building.



Figure 124. Portal and entrance to the northeast units of cabin group C (B-24), now office spaces. (Photo: Harrison for NPS)

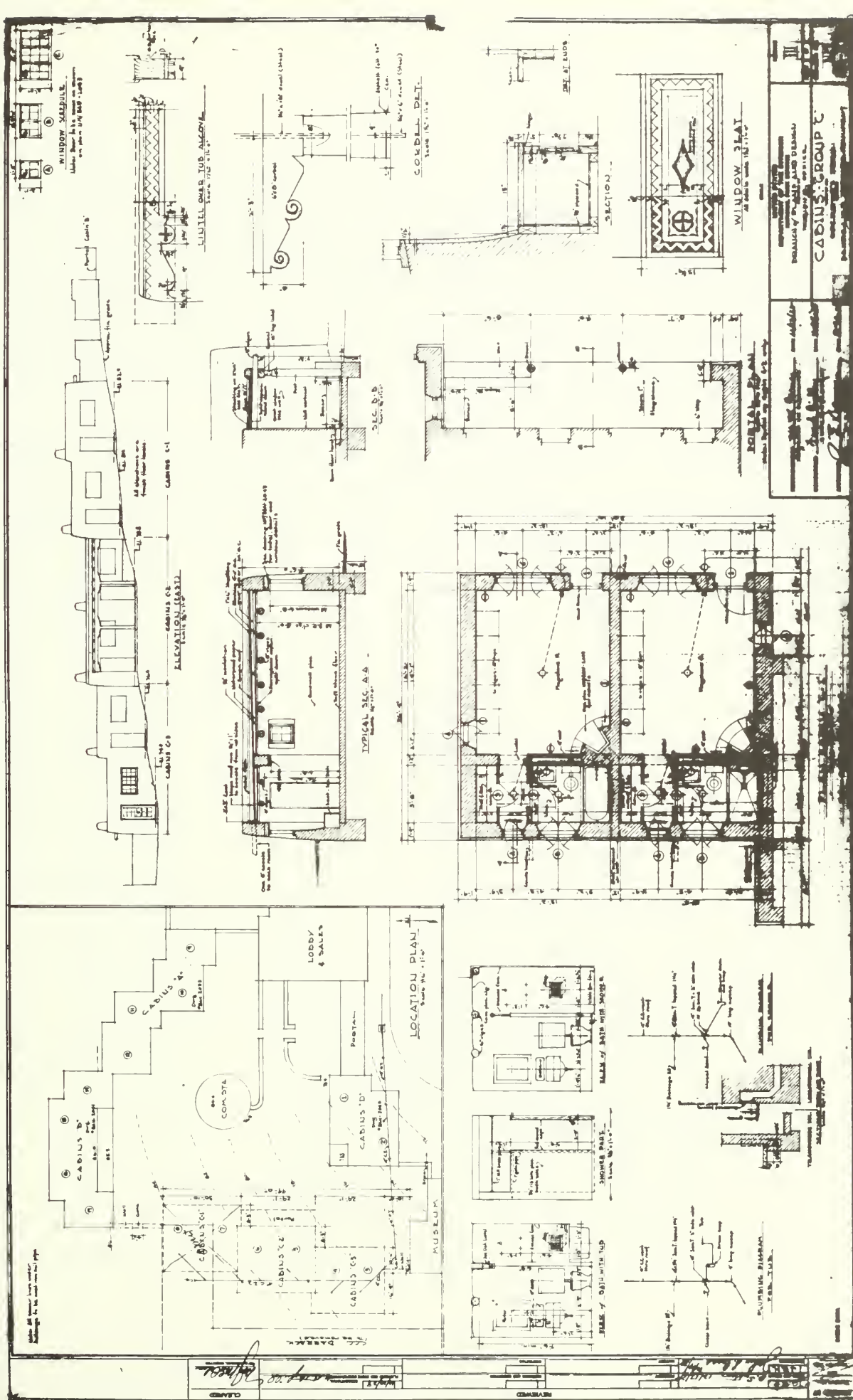


Figure 125. Plans for B-24C and B-24D of cabin group C, 1938 (drawing 315/2042, sheet 1).

B-25, Stable and Quarters

The stable (figures 126 and 127) was designed to house horses and mules rented by the concessioner and as quarters for the packer who took people on day rides and short pack trips. Mrs. Frey had requested one room in this building for a chicken house to supply the lodge dining room. The building was constructed in 1939. The stalls were paved with wood blocks treated with asphalt as a preservative. The wood blocks were cut on the site.¹⁵⁷ The living quarters had a cooking range and a sink, two 30-gallon hot-water tanks, and a small coal heater. The Kohler bathroom fixtures were bought from Mrs. Frey at half price.¹⁵⁸ She had salvaged them from her old lodge when it was demolished. During the war the monument staff used the stables to house pack animals for backcountry trail work. Mrs. Frey started the horse concession again on April 15, 1946. The monument took over management of the stable and corral permanently in the fall of 1960 and has used it ever since for monument stock.

A metal septic tank was installed for the building in 1951. The six stalls were rehabilitated in 1953. A new pole corral was constructed in 1956. A large portion of the building's roof was repaired in 1960 by mopping with asbestos roof coating and plastic cement. That same year, some of the wiring was redone, replacing "extension cords strung all over the building." A cooler, kitchen sink, and utility cabinet were added to the living quarters in 1968, and the water heater, toilet, and shower were replaced.¹⁵⁹ The building received a new foam roof in 1981.

Lyle E. Bennett designed the building.

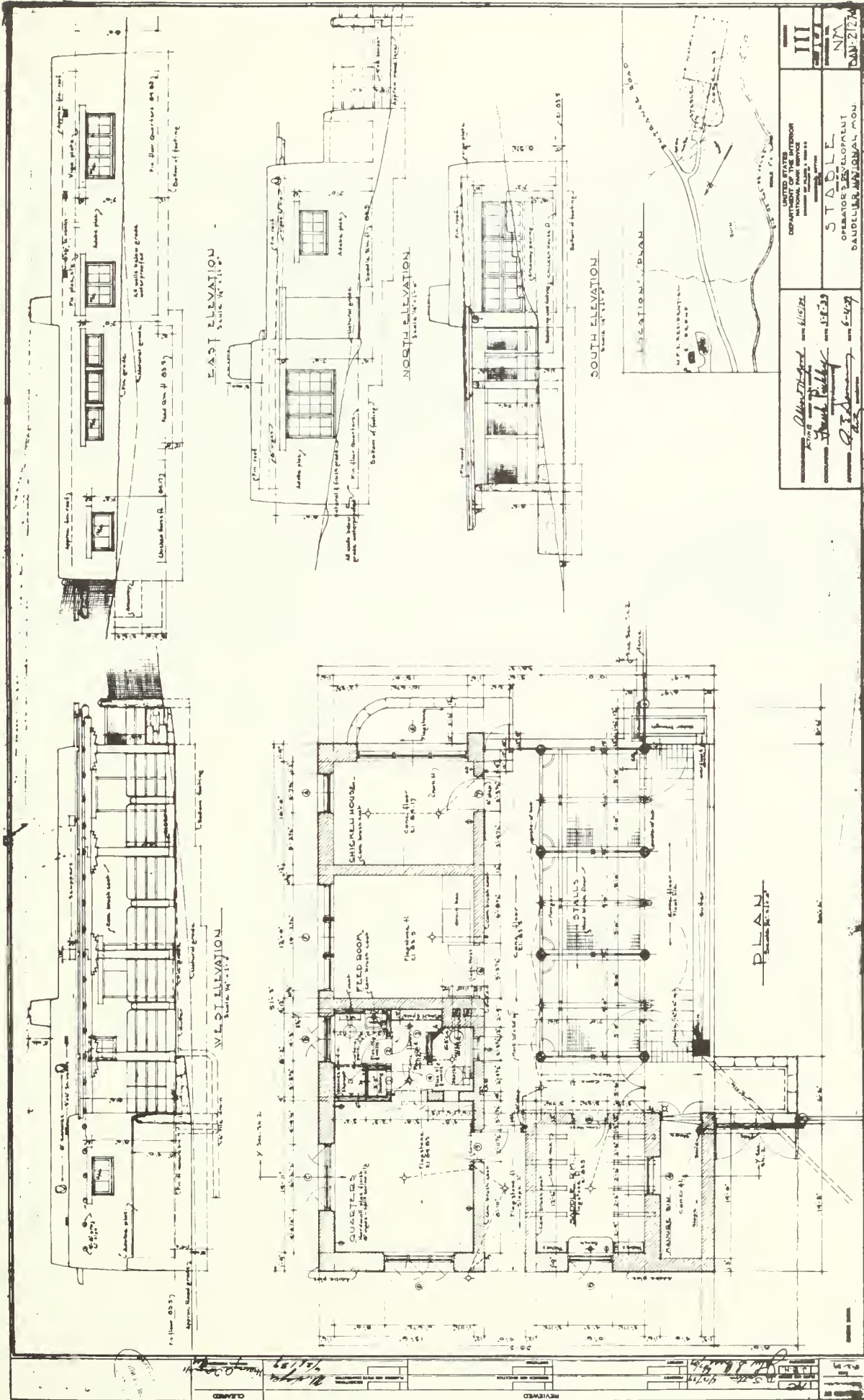


Figure 126. Plans for the stable and quarters (B-25), 1939 (drawing 315/2127A, sheet 1).



Figure 127. B-25, the stable in 1982. (Photo: Harrison for NPS)

B-26, Checking Station

This building (figures 128 and 129) was constructed in 1940. Boss Pinkley and his staff had seen an urgent need for a checking or entrance station outside the canyon. They agreed that it should be located in the middle of the entrance road. They figured that an interior floor space measuring 8 feet by 10 feet would be adequate. They wanted a door on each side facing the road, a window on the other two sides, and a small stove for either wood or coal.¹⁶⁰ They finally chose a location – on what was then Forest Service land – but at the junction of the monument entrance road and the Jemez road. It was a convenient location. Visitors would know then that they were entering the monument and could turn back quickly if they chose not to pay the entrance fee.¹⁶¹ Other possible locations along the entrance road were discounted because the grade was too steep.¹⁶² The monument received a special use permit from the Forest Service and began building.¹⁶³ The CCC crew built the structure with the usual stonework, but finished the outside with an adobe-colored cement stucco.¹⁶⁴ A small pit toilet for use by the building's temporary residents was approved for construction in 1940, based on the same plans that were used at the fire lookout.¹⁶⁵

Work done to the building has generally consisted of maintenance over the years, with a few exceptions. In 1957, the building was vandalized and a number of panes of glass had to be replaced. In 1965, a portion of the patio wall was covered so that cars could come in closer to the building. A metal and glass bulletin board was installed in 1976, and at the end of that year stoplights were put in. A hot plate, an electric heater, and a small refrigerator were added to the building by 1978.¹⁶⁶ After the building was struck by lightning in 1977, the park staff added lightning rods. A telephone, window bars, and a floor safe have also been installed.

Lyle Bennett designed the building on a site plan by Charles Richey.

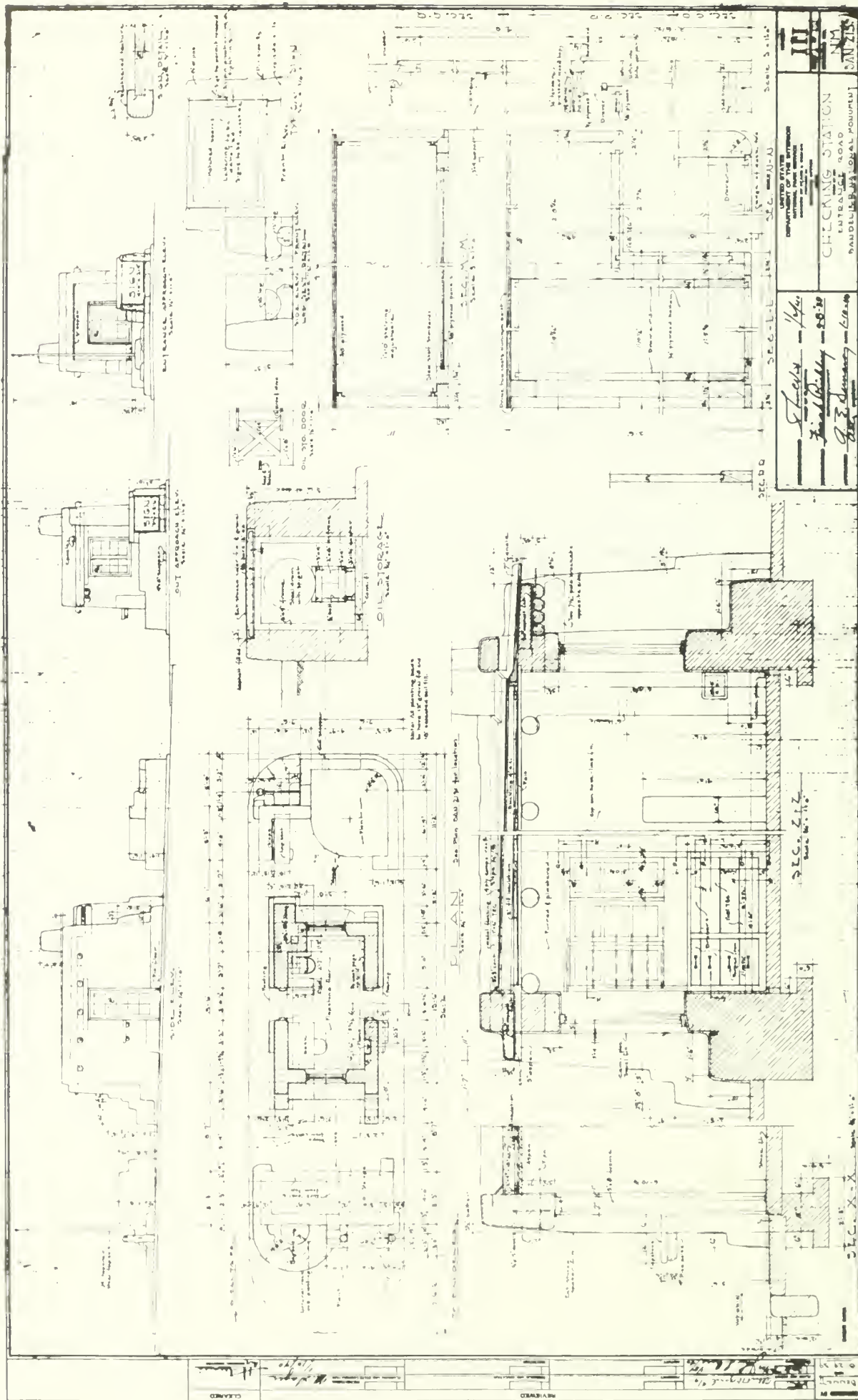


Figure 128. Plans for the checking station (B-26), 1939 (drawing 315/2133, sheet 1).



Figure 129. In 1982 the checking station, B-26, retained its original design intent. Additional signs, lights, and an antenna altered the clarity of its appearance. (Photo: Harrison for NPS)

B-27, Cabin Group E-1 and Linen Storage

This building (figures 130 and 131) was constructed in 1940 as two lodge units, each with its own bath. The building had two large service rooms, which were accessed only from the outside. One of the service rooms had shelves for linen storage and a sorting table. The other room contained a 180-gallon water heater and storage tank to supply hot water. This hot-water arrangement did not work out, and in 1950 pipelines were installed to connect the far buildings with the main hot-water plant in the "kiva" (B-21). The heater room in this structure was then converted to additional space for the lodge housekeeper.¹⁶⁷ The large service room was converted to curatorial storage. The small heater room was converted to a photography darkroom in 1977. Gas wall heaters and kitchenettes were installed in both of these units when they were turned into employee housing.¹⁶⁸ The building received a new foam roof in 1981. Water, sewer, gas, and electrical service were replaced in 1983-84.

This building was designed by Lyle Bennett.



Figure 130. B-27, cabin group E-1, in 1982. (Photo: Copeland for NPS)

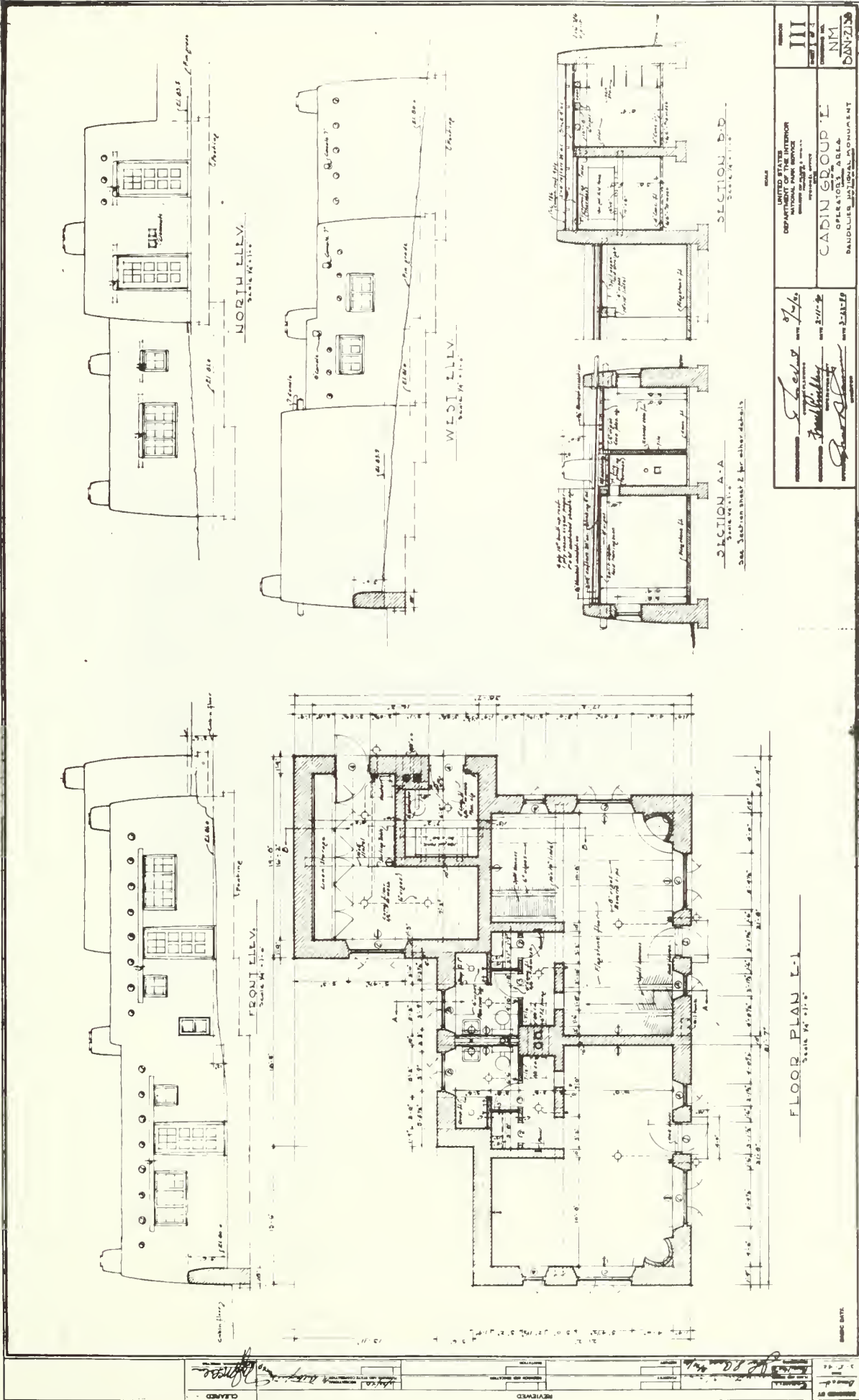


Figure 131. Plans for cabin group E-1 (B-27), 1940 (drawing 315/2138, sheet 1).

B-28, Cabin Group E-2

This building (figures 132 and 133) was constructed in 1940 from a plan identical with that of B-29. This building had two lodge units, each with a bath. NPS took over management of this building in 1968 and installed a kitchenette in each of the lodge units at that time. Natural gas wall units were also added. Since then these two units have served as park housing. Most of the other work done to the buildings has been maintenance. The building records indicate that cracks in the fireplace were filled with silicone rubber in 1981.¹⁶⁹ This is the first time that cracks were noted anywhere in the records, other than in a comment by the custodian in 1938 that the tuff rock fireplaces would not stand the heat and had to be patched.¹⁷⁰ Recent changes include the installation of fireplace Heatilators with glass doors, and new water, sewer, electrical, and gas service.

Lyle Bennett designed the building.



Figure 132. The pueblo revival style of the Bandelier development fit the geographic locale. Here the relationship between cabin group E-2 (B-28) and the adjacent cliffs is apparent. (Photo: Copeland for NPS)

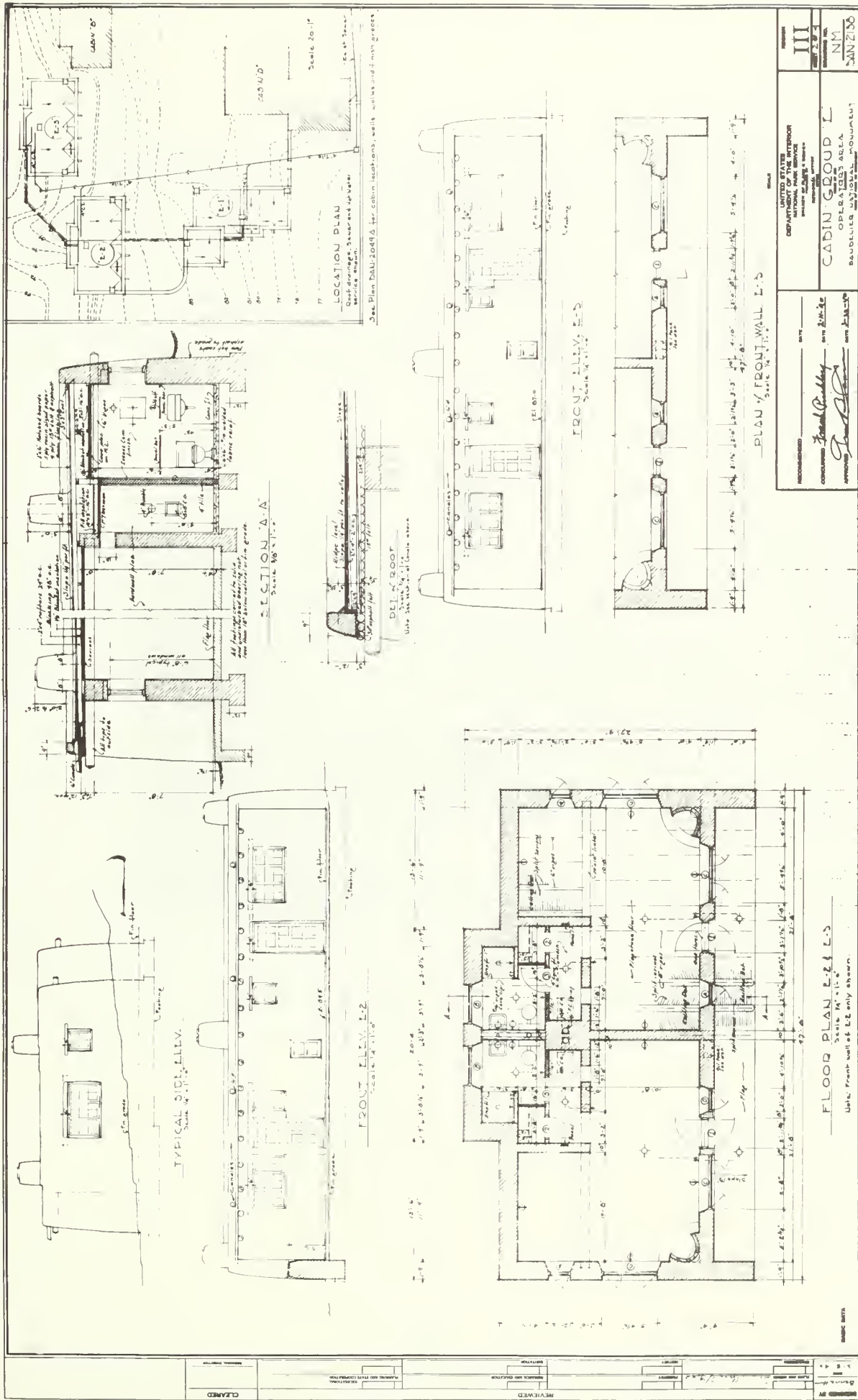


Figure 133. Plans for cabin group E-2 (B-28), 1940 (drawing 315/2138, sheet 2).

B-29, Cabin Group E-3

This cabin group containing two units (figure 134) was constructed from a plan identical with that of B-28 (figure 133). The building was constructed in 1940 with two lodge units, each with a bath. The installation of natural gas wall furnaces in recent years augmented the original heating system. These two units were turned into the park library and curatorial storage. The east unit was partitioned into two rooms in 1980, and the ceilings in this unit were covered with Celotex, covering over the original materials and construction. Metal bars and styrofoam placed over the windows provided for museum security and temperature control, respectively. Plumbing fixtures were removed from the bathroom, with the exception of the shower. The original curtain rods remained. The west unit became the park library and underwent considerably less alteration. The building received a new foam roof in 1981 and new water, sewer, gas, electrical, fire protection, and security services in 1983-84.¹⁷¹

Lyle Bennett designed the building.



Figure 134. Shown here in 1982, B-29 (cabin group E-3) houses the park's library and some of its curatorial storage. (Photo: Harrison for NPS)

B-30, Fire Lookout

This building (figures 135-137) was constructed in 1941 on land that was then under USFS jurisdiction but has since become part of Bandelier. Hub Chase, Charles Richey, and Regional Forester Saari established the location for the building in July 1940.¹⁷² Lyle Bennett designed the building, basing his work on a Park Service standardized fire lookout, drawing PG-3040.¹⁷³

The building was designed as an "above-ground house type" where the placement of the lookout portion at 8 to 12 feet above the ground would give it a clear view above the surrounding vegetation. The upper story had a catwalk around all four sides and an Osborne Fire Finder mounted in the center of the upper glass-enclosed room. The lower story was a small quarters. The bottom story was constructed of stone and the upper of wood frame. The regional forester had proposed that the work be done by the CCC, because it would be considerably cheaper than by contract.¹⁷⁴ Lightning protectors were installed on the building, complying with the USFS pamphlet "Instructions and Specifications for Protection Against Lightning of Lookout Houses, Towers and Other Structures on Exposed Points."¹⁷⁵ Windows were set in mastic – a sealant with puttylike properties. Outside woodwork was originally treated with linseed oil and creosote with a small amount of pigment added to make the wood look weathered. Copper flashing that trimmed the roof edge prevented the wind from blowing back the composition roof. A second concealed flashing strip laid under the roofing protected the sheathing. A 4-inch strip of mineral surface roofing was pasted over the cap flashing to "improve appearance and retard corrosion of iron nails and copper."¹⁷⁶ The regional forester wanted the building painted, but the NPS officials did not, believing that the wood would fare better with preservative treatment. They did allow that if the woodwork on the building was to be painted, it should be a warm, neutral gray.¹⁷⁷ The woodwork was painted (color unknown) in 1942. The custodian noted that "the fire guard has painted the lookout with a brush in one hand and his binoculars in the other."¹⁷⁸

Windows were replaced in 1953. The AEC conducted a series of tests in a technical area northeast of headquarters and as a result broke windows in the lookout on January 8 and 22. The AEC replaced the windows. The custodian wrote that he awaited the results of the seismograph reading to determine the strength of the tests.¹⁷⁹ He never printed the results.

In 1956 the building received a slump block addition that contained a kitchen and bathroom. In the early 1980s the monument staff altered the window framing so that it angled from the outer edge of the eaves inward to the wood framing of the upper story. In 1977 new steps and a replacement guardrail were constructed. Other changes to the building have consisted of maintenance.¹⁸⁰ In 1984 the building received new wiring. The building houses all the monument's major communication systems.

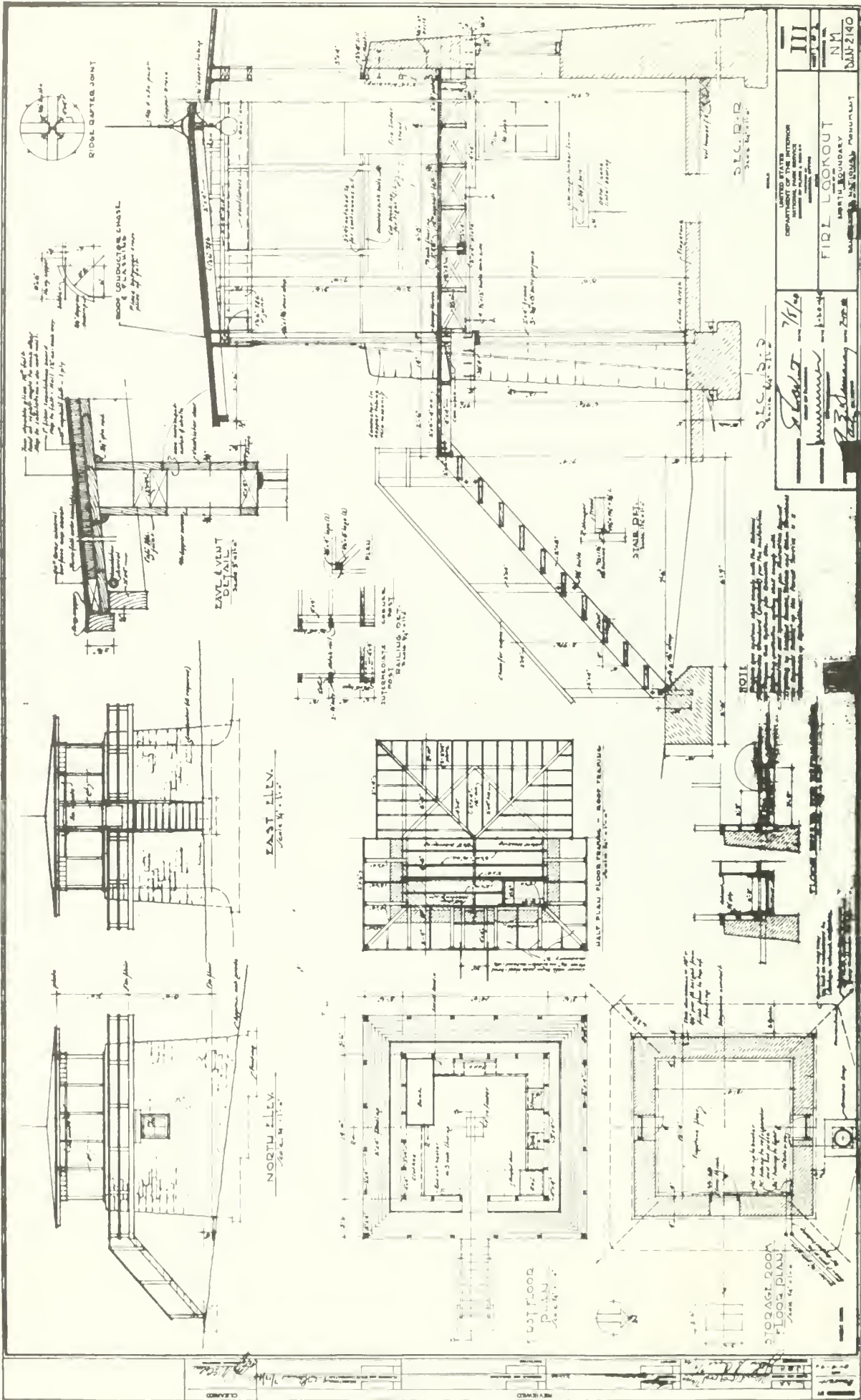


Figure 135. Plans for the fire lookout (B-30), 1940 (drawing 315/2140, sheet 1).



Figure 136. In this photograph of the fire lookout (B-30) under construction, the upper windows are plumb. (Photo: Bandelier)



Figure 137. This photograph taken in 1982 shows the change in the angle of the windows and the 1956 addition. (Photo: Harrison for NPS)

B-32, Residence 4

In 1938, Hugh Miller, the assistant superintendent for Southwestern Monuments, reported an urgent need for an additional residence, residence 4, at Bandelier. He believed it should be a four-room house with a basement and central heating.¹⁸¹ In 1941, the custodian's residence (figures 138-140) was under construction. The residence was completed on June 20, 1941,¹⁸² and the oil furnace for central heating was installed later that summer.¹⁸³ It was the only residence with hardwood floors in the living room, dining room, and hall space.

Natural gas, probably installed in 1964, now heats the building. With a few exceptions, most of the work done on this building has consisted of routine maintenance. The exceptions were kitchen remodeling and installation of thermal pane windows in 1978 and the addition of a skylight and a foam roof in 1981.¹⁸⁴ Water, sewer, and gas service were replaced in 1983.

Lyle Bennett designed the building. R.J. Nicholson designed the heating system of 1964.



Figure 138. Southwest elevation of B-32 in 1984. (Photo: Copeland for NPS)

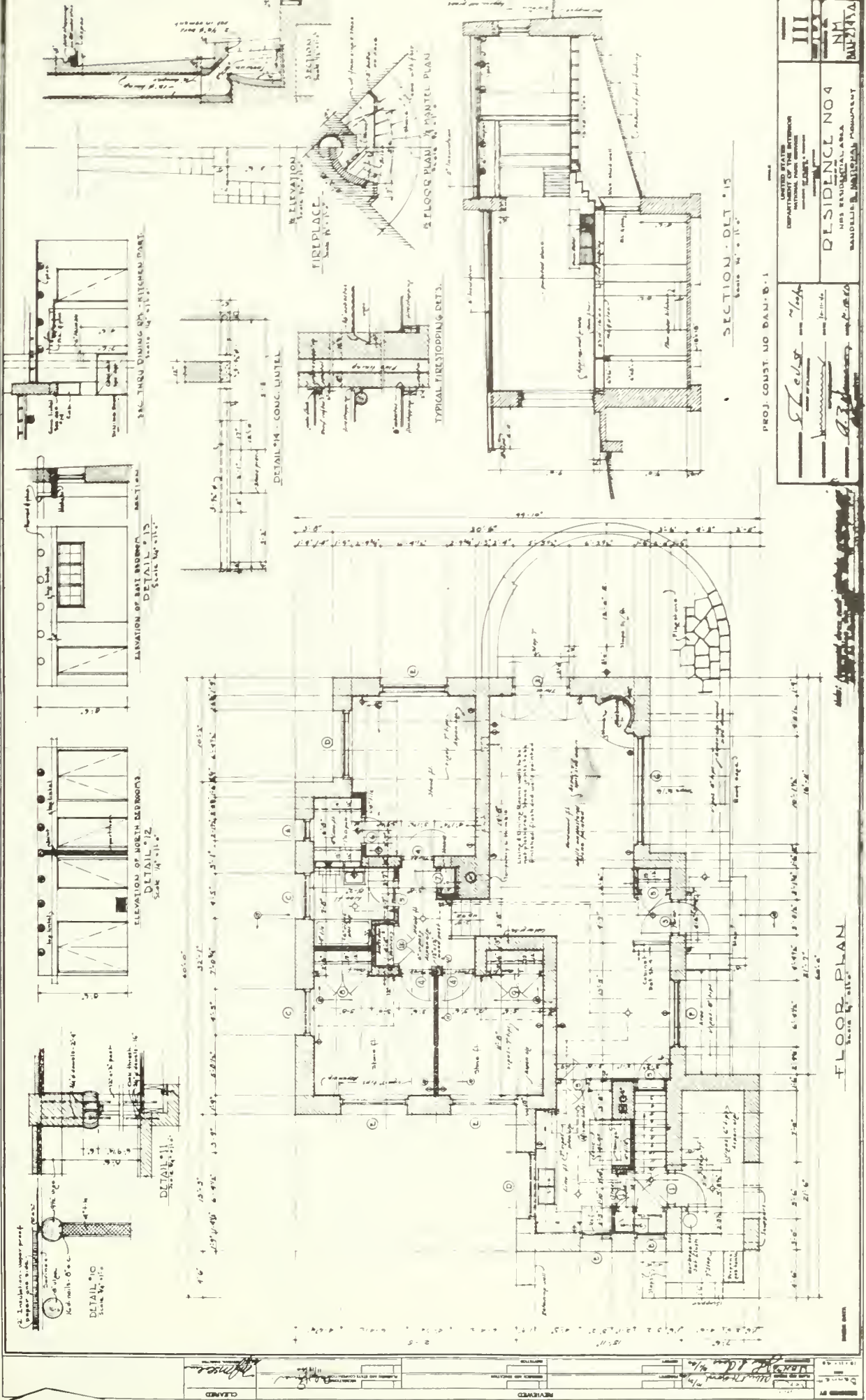


Figure 139. Plans for residence 4 (B-32), 1940 (drawing 315/2143A, sheet 1).

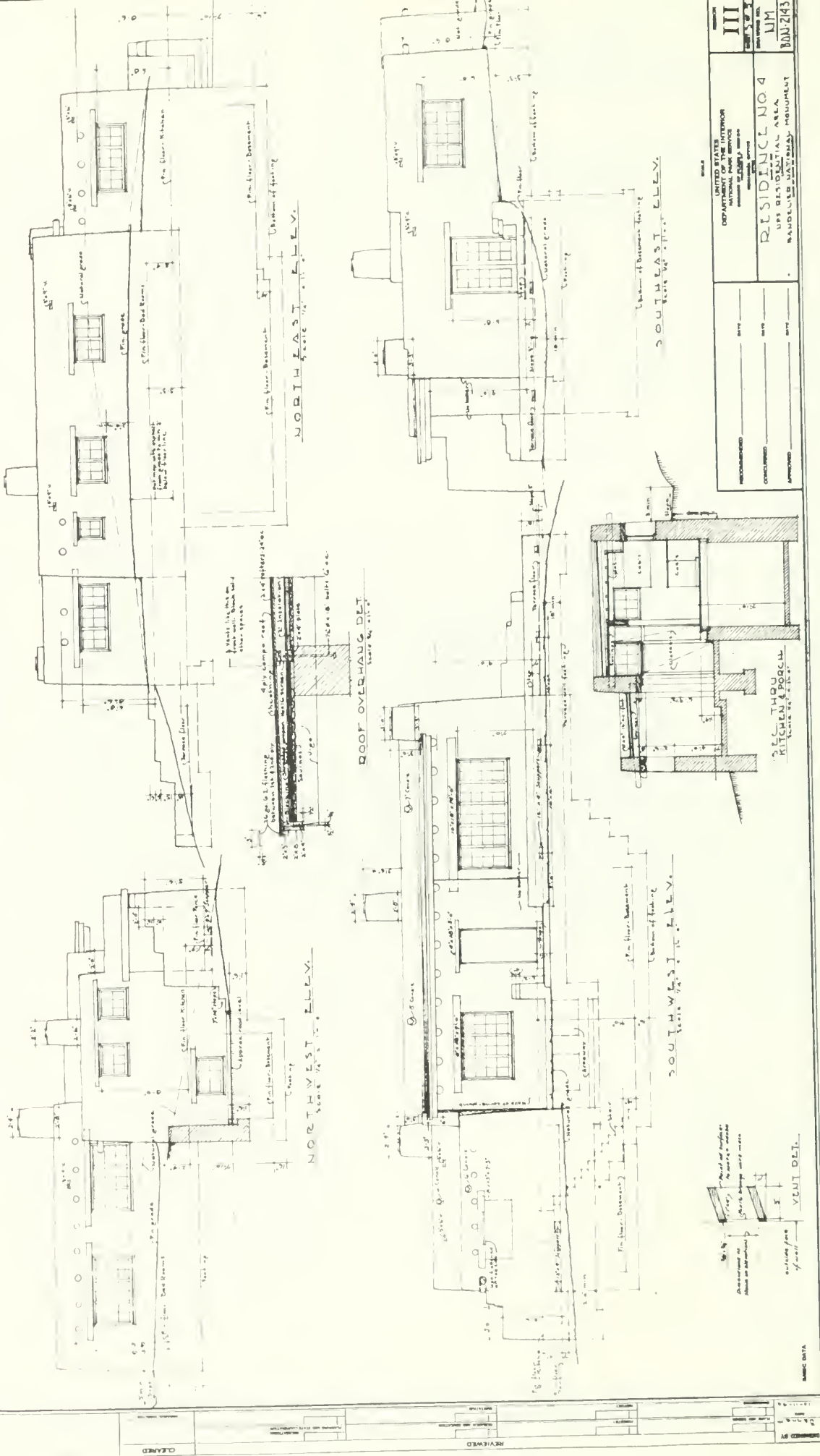


Figure 140. Plans for residence 4 (B-32), 1940 (drawing 315/2143A, sheet 3).

ENDNOTES

1. "Custodian's Monthly Report," 1934, RG 79, file 207-02, Denver Federal Records Center (DFRC).
2. "Custodian's Monthly Narrative," July 1933, RG 79, file 207-02, DFRC.
3. "Specifications for Construction of a Headquarters Office . . . ," 3-4, and other specifications on file at Bandelier.
4. Hugh Miller, "Memo for the Superintendent," October 25, 1939, RG 79, file 204, DFRC; and photo 01916A in the collection of Bandelier National Monument, showing the cleanup of the quarry prior to its conversion to an amphitheater.
5. Jared Morse, "Report to the Chief Architect through the Superintendent of Southwestern Monuments," Bandelier National Monument, October 25, 1935, RG 79, file 000, DFRC.
6. Attachment to "Custodian's Monthly Narrative, July 1937," RG 79, file 207-02; and "Report to the Chief Architect . . . 5th Period . . . ," RG 79, file 000, DFRC, 9. "Custodian's Monthly Narrative, February 1938," RG 79, file 207-02, DFRC.
7. Form 10-352, September 15, 1941, RG 79, file 621, DFRC.
8. "Specifications for Construction of a Comfort Station at Headquarters . . . ," 4-10; and other specifications, on file at Bandelier.
9. Charles Richey to William Carnes, November 15, 1935, RG 79, file 000, DFRC; William Carnes (Edward A. Nickel) to Charles Richey, November 21, 1935, RG 79, file 000, DFRC.
10. "Specifications for Construction of the Following ECW Projects: . . . Garage . . . Warehouse . . . Excavation . . . Walls . . . ," 7, on file at Bandelier.
11. Ibid., 6-7. The specifications for construction of a headquarters office required that the "Pajauque (sic) earth (be) obtained within the monument," p. 28. All the other specifications required that the Pojuaque clay be obtained from an area designated by the custodian. Park archeologist William Sweetland had been grappling with deciphering the content of this mortar/plaster and its origin for years. "Pojuaque" is the name of a small village on the Rio Grande, between Bandelier and Santa Fe. The construction records reviewed for this document included information of transportation of materials from places like railheads and quarries; no information was uncovered during the course of research on transporting clay from Pojuaque. We concluded, then, that the term "Pojuaque" perhaps refers to the color of clay, or the method of application. After studying the soils in the present monument boundaries, Bill felt that it was probable that the "Pojuaque" clay came from a clay deposit approximately 300 yards west of the quarry site (present amphitheater). If this was the case, the clay would have been hauled down with the building stone and probably would not have been mentioned as a separate item on the tally sheets. Also, the monument custodian had a special use permit with the Forest Service, which had jurisdiction over that area of land at the time, for the quarry. A borrow pit could have fallen under the same permit, considering its similar nature.
12. "Specifications for Construction of a Headquarter Office . . . ," 7, on file at Bandelier.
13. Charles Richey to William Carnes, November 15, 1935, RG 79, file 000, DFRC.
14. "Custodian's Monthly Narrative," February and May 1941, Bandelier.

15. James Fulton, forestry foreman, "ECW Forestry Report, November 23, 1935," RG 79, file Bandelier NM-1 personnel, V-1-C1-b-NM, DFRC.
16. Fulton, "ECW Forestry Report, April 1936," RG 79, file 207-02, DFRC.
17. "Specifications for Construction of a Headquarters Office . . . ," 16, on file at Bandelier.
18. "Field Report, Chas. A. Richey, Plans and Design Division, May 15, 1939," RG 79, file 204, DFRC.
19. "Specifications for Construction of a Comfort Station at Headquarters," 14; and other specifications previously cited; also original drawings for buildings.
20. "Specifications for Construction of a Headquarters Office," 25-27; and other specifications previously cited, on file at Bandelier.
21. Ibid., 17-18, 25-27, and architectural drawings (BAN 3029B, sheet 3 and others).
22. Boss Pinkley to chief engineer, NPS, December 26, 1935, RG 79, file 000, DFRC; E.A. Nickel to Frank Kittredge, January 15, 1936, RG 79, file 000, DFRC.
23. "Specifications for Construction of a Comfort Station at Headquarters . . . ," 8, on file at Bandelier.
24. Milton McColm, acting regional director, to H.B. Chase, November 10, 1938, RG 79, file 621, DFRC; and William S. Bryant, acting regional director, to Hugh Miller, March 13, 1941, RG 79, file 620, DFRC.
25. McColm to Chase, January 11, 1939, RG 79, file 620-58, DFRC.
26. Form 10-768, Individual Building Data for B-32, on file at Bandelier.
27. Architectural drawings such as BAN 2030, sheet 4, and others; specifications such as "Specifications for Construction of a Headquarters Office . . . ," 21, and others, on file at Bandelier.
28. Architectural drawings such as BAN 2030, sheet 4, and others.
29. "Specifications for Construction of a Headquarters Office . . . ," 7-8, and others, on file at Bandelier.
30. Lyle Bennett, "Field Report, Branch of Plans and Design, June 16, 1938," RG 79, file 204-30, DFRC.
31. William S. Bryant, reiterating recommendations of Lyle Bennett, in letter to Hugh Miller, March 13, 1941, RG 79, file 620, DFRC.
32. Hub Chase to Boss Pinkley, January 16, 1939; Pinkley to Chase, January 31, 1939; and E.A. Pesonen to Pinkley, February 17, 1939, all from RG 79, file 620-58, DFRC; Also, Lyle E. Bennett, "Field Report, Branch of Plans and Design, January 19, 1939," RG 79, file 204, DFRC.
33. William S. Bryant to Hugh Miller, March 13, 1941, RG 79, file 620, DFRC.
34. Furniture drawings BAN 3105 and others.
35. Lyle E. Bennett, "Bandelier National Monument Field Trip Report," February 9, 1938, Bandelier.
36. Furniture drawing BAN 2037, sheet 3.

37. "Technical Comment by Regional Landscape Architect," April 8, 1939, RG 79, file 621, DFRC.
38. Milton McColm to H.B. Chase, November 10, 1938, RG 79, file 621, DFRC; Lyle E. Bennett, associate architect, "Field Report, Branch of Plans and Design, October 12, 1938," RG 79, file 204-30, DFRC.
39. Hugh Miller, "Memo for the Superintendent, March 31, 1939," RG 79, file 204, DFRC.
40. Drawings, BAN 2037, sheets A through Y.
41. Form 10-352, September 15, 1941, RG 79, file 621, DFRC.
42. Attachment to "Custodian's Monthly Narrative, July 1937," RG 79, file 207-02. The doors for the Tumacacori museum were patterned after those of the Sonoran mission of San Ignacio in Mexico.
43. "Custodian's Monthly Narrative, December 1942," Bandelier.
44. Draft "Custodian's Monthly Narrative," undated, but probably December 1938, RG 79, file 207-02, DFRC.
45. "Custodian's Monthly Narrative, May 1942," Bandelier.
46. "Custodian's Monthly Narrative," September through November 1942, Bandelier.
47. "Custodian's Monthly Narrative, December 1943," Bandelier.
48. "Custodian's Monthly Narrative, March 1944," Bandelier.
49. "Custodian's Monthly Narrative, September 1944," Bandelier.
50. "Custodian's Monthly Narrative, September 1952," Bandelier.
51. Recommendations by Lyle E. Bennett, summarized in a letter from William S. Bryant to Hugh Miller, March 13, 1941, RG 79, file 260, DFRC.
52. "Custodian's Monthly Narrative, December 1946," Bandelier.
53. "Custodian's Monthly Narrative, February 1953," Bandelier.
54. "Custodian's Monthly Narrative, July 1953," Bandelier.
55. "Custodian's Monthly Narrative, July 1953," Bandelier.
56. Hugh Miller to Art Thomas, July 17, 1940, RG 79, file 200, DFRC.
57. "Custodian's Monthly Narrative, January 1945," Bandelier.
58. Chester A. Thomas to Miller, July 9, 1940, RG 79, file 200, DFRC.
59. Milton McColm to Miller, February 24, 1940, RG 79, file 620, DFRC.
60. Thomas to Miller, July 9, 1940, RG 79, file 200, DFRC.
61. McColm to Miller, February 24, 1940, RG 79, file 620, DFRC.

62. H.B. Chase, "Bandelier National Monument Emergency Conservation Work – Report Covering Activities of the Camp for the Six Months Period Beginning October 1, 1934 and Ending March 31, 1935." No pagination, on file at Bandelier.
63. "Custodian's Monthly Narrative, January 1941," Bandelier.
64. Fixed property record, B-1 comfort station, Bandelier.
65. "Custodian's Monthly Narrative, September 1953," Bandelier.
66. "Custodian's Monthly Narrative, December 1937," Bandelier.
67. "Custodian's Monthly Narrative, April 1944," Bandelier.
68. "Custodian's Monthly Narrative, September 1959," Bandelier.
69. Maintenance Update Sheet attached to form 10-768 Individual Building Data, Bandelier.
70. Hub Chase to Boss Pinkley, February 15, 1935, in CCC job files, Bandelier.
71. Dale King to Boss Pinkley, June 15, 1939, RG 79, file 620-46, DFRC.
72. "Report to the Chief Architect on 5th Period ECW Work, April 1, 1935 to September 30, 1935," RG 79, file 000, DFRC.
73. "Custodian's Monthly Narrative, February 1949," Bandelier.
74. Cy Harkins to Boss Pinkley, October 31, 1938, RG 79, file 200, DFRC.
75. Maintenance Update Sheet attached to form 10-768, Individual Building Data; and other sources, Bandelier.
76. Hugh Miller to William Carnes, September 19, 1935, RG 79, file 000, DFRC; Boss Pinkley to Branch of Plans and Design, December 23, 1935, RG 79, file 000, DFRC.
77. Charles Richey to Carnes, September 19, 1935, RG 79, file 000, DFRC.
78. Dale S. King, "Memo to the Superintendent, Report of Special Duty Assignment to Bandelier," July 14, 1939, RG 79, file 204, DFRC.
79. "Custodian's Monthly Narrative, February 1938," RG 79, file 207-02, DFRC.
80. Milton McColm to H.B. Chase, December 12, 1939, CCC job files 1, 48, 96, Bandelier.
81. "Custodian's Monthly Narrative, December 1959," Bandelier.
82. "Custodian's Monthly Narrative, April 1950," Bandelier.
83. "Custodian's Monthly Narrative, April 1953," Bandelier.
84. "Custodian's Monthly Narrative, February 1938," Bandelier.
85. Dale King to Boss Pinkley, June 15, 1939, RG 79, file 620-46, DFRC.

86. "Custodian's Monthly Narrative, April 1948," Bandelier.
87. Helmut Naumer also completed some additional pastels for the monument. He probably completed them at some later date. They were not part of this initial federal art project.
88. "Custodian's Monthly Narrative," January and February 1939, RG 79, file 207-02, DFRC. Because space was lacking to display the Helmut Naumer pastels, King recommended to Thomas that the San Ildefonso pastel be transferred to Aztec Ruins, the Jemez pastel to El Morro, one Tesuque pastel to Montezuma Castle, and the other to Tuzigoot (King to Art Thomas, August 28, 1940, RG 79, file 200, DFRC).
89. Dale King to Art Thomas, August 28, 1940, RG 79, file 200, DFRC. An extremely handsome oil painting of the Grand Canyon done by Chris Jorgensen hangs in the Southwest Regional Office at the top of the stairwell next to the regional director's office.
90. "Custodian's Monthly Narrative, February 1952," Bandelier.
91. H.B. Chase, "Reporting ECW Activities for the Six Months Period from April 1 to September 30, 1935 at Bandelier National Monument," Bandelier.
92. Form 10-352, dated June 15, 1939, in RG 79, file 620-100, Denver Federal Records Center, and in CCC job file 1.47, job 85, Bandelier.
93. "Custodian's Monthly Narrative," December 1953 and April 1945, Bandelier.
94. Maintenance Update Sheet attached to form 10-768 Individual Building Data, Bandelier.
95. Ibid.
96. Frank Ahern, fire protection engineer, U.S. Department of the Interior, to William Carnes, July 15, 1935, RG 79, file 000, DFRC; Charles Richey to William Carnes, July 26, 1935, RG 79, file 000, DFRC.
97. "Custodian's Monthly Narrative, January 1950," Bandelier.
98. Jared B. Morse, "Report to the Chief Architect through the Superintendent, Southwestern Monuments, Bandelier National Monument," October 25, 1935, RG 79, file 000, DFRC.
99. "Custodian's Monthly Narrative," January and May 1938, RG 79, file 207-02, DFRC; form 10-352, no date, in CCC job files, Bandelier.
100. "Custodian's Monthly Narrative, September 1942," Bandelier.
101. Form 10-768, Individual Building Data, and attached Maintenance Update Sheet, Bandelier.
102. Form 10-768, Individual Building Data, Bandelier.
103. Jared B. Morse, "Report to the Chief Architect through the Superintendent of Southwestern Monuments, Bandelier," October 25, 1935, RG 79, file 000, DFRC.
104. H.B. Chase, "Reporting ECW Activities for the Six Months Period from April 1 to September 30, 1935 at Bandelier National Monument," Bandelier.

105. Charles A. Richey, "Report to the Chief Architect through the Superintendent, Southwestern Monuments, Field Trip, November 23-25, 1935," RG 79, file 000, DFRC.
106. "Custodian's Monthly Narrative, January 1943," Bandelier.
107. Form 10-768, Individual Building Data, Bandelier.
108. "Custodian's Monthly Narrative, September 1936," Bandelier.
109. "Custodian's Monthly Narrative, June 1941," Bandelier.
110. "Custodian's Monthly Narrative, January 1941," Bandelier.
111. Drawing BAN 2129, Denver Service Center.
112. "Custodian's Monthly Narrative, September 1944," Bandelier.
113. "Custodian's Monthly Narrative, November 1953," Bandelier.
114. Form 10-768, Individual Building Data, and attached Maintenance Update Sheet, Bandelier.
115. Charles Richey and George Collins to H.B. Chase, June 22, 1936, RG 79, file 620-58, DFRC.
116. Form 10-768, Individual Building Data and attached Maintenance Update Sheets, Bandelier.
117. "Report to the Chief Architect on 5th Period ECW Work, April 1, 1935 to September 30, 1935," RG 79, file 000, DFRC.
118. Ibid.
119. Form 10-768, Individual Building Data, and attached Maintenance Update Sheets, Bandelier.
120. Hugh Miller to Boss Pinkley, March 31, 1939, RG 79, file 204, DFRC.
121. Form 10-352, July 25, 1941, RG 79, file 620, DFRC.
122. Form 10-768, Individual Building Data, and attached Maintenance Update Sheets, Bandelier.
123. Form 10-768, Individual Building Data, Bandelier.
124. Raymond Higgins, "CCC Inspection," November 11, 1938, RG 78, file 204-30, DFRC.
125. Form 10-768, Individual Building Data, Bandelier.
126. CCC job file, job 49, Bandelier.
127. Boss Pinkley to the regional director, Region III, December 20, 1939, RG 79, file 620-75, DFRC.
128. Form 10-786, Individual Building Data, Bandelier.
129. Lyle Bennett, "Field Trip, Branch of Plans and Design," June 1, 1938, RG 79, file 204-30, DFRC; and Milton McColm to H.B. Chase, January 11, 1939, RG 79, file 620-58, DFRC.

130. Lyle Bennett, "Field Report, Branch of Plans and Design," October 12, 1938, RG 79, file 204-30, DFRC.
131. "Custodian's Monthly Narrative, June 1954," Bandelier.
132. "Custodian's Monthly Narrative," September and October 1960, Bandelier.
133. "Custodian's Monthly Narrative," February and March 1960; and Form 10-768, Individual Building Data, Bandelier.
134. Form 10-352, April 21, 1939, RG 79, file 620-58, DFRC.
135. Form 10-768, Individual Building Data, Bandelier.
136. Hillory Tolson to Conrad Wirth and Arno Cammerer, November 26, 1937, RG 79, file 620-58, DFRC; and Herbert Maier and Harvey Cornell to H.B. Chase, December 10, 1937, RG 79, file 620-58, DFRC.
137. Form 10-352, April 21, 1939, RG 79, file 620-58, DFRC.
138. Form 10-352 in CCC job file 1.09, job 51, Bandelier.
139. Hugh Miller, "Memo for the Superintendent, Southwestern Monuments," October 12, 1939, RG 79, file 204-30, DFRC.
140. Form 10-768, Individual Building Data, Bandelier.
141. Form 10-352, June 26, 1939, RG 79, file 620-58, DFRC.
142. "Custodian's Monthly Narrative," January 1945, September 1959, and January 1960, Bandelier.
143. Form 10-352, dated July 5, 1939, RG 79, file 620-58.
144. Cabin group A painting schedule, RG 79, file 620-08.
145. Lyle E. Bennett to Laura Soullière Harrison, letter dated October 1985, on file at Southwest Regional Office.
146. Painting schedule, cabin group B, RG 79, file 620-15, DFRC.
147. Form 10-768, Individual Building Data, Bandelier.
148. Form 10-352, undated, RG 79, file 620-08, DFRC.
149. Painting schedule, comfort station, Bandelier, RG 79, file 620-08, DFRC.
150. Lyle E. Bennett, "Field Trip, Branch of Plans and Design," June 1, 1938, RG 79, file 204-30, DFRC.
151. CCC job file 1.21, Bandelier.
152. Form 10-352, RG 79, file 620-53, DFRC.
153. "Custodian's Monthly Narrative," September and November 1959, Bandelier.
154. Form 10-768, Individual Building Data and attached Maintenance Update Sheets, Bandelier.

155. CCC job file 1.33, job 77, Bandelier.
156. Form 10-768, Individual Building Data, and attached Maintenance Update Sheets, Bandelier.
157. Lyle E. Bennett, "Field Reports, Plans and Design Division, Bandelier National Monument," December 2, 1939, Bandelier.
158. H.B. Chase to Boss Pinkley, May 26, 1939, CCC job file 1.46, Bandelier.
159. Form 10-768, Individual Building Data, and attached Maintenance Update Sheets; and "Custodian's Monthly Narrative," March 1956 and August 1960, Bandelier.
160. Hugh Miller, "Memo for the Superintendent," July 6, 1939, RG 79, file 620-08, DFRC; and Boss Pinkley to the regional director, July 6, 1939, RG 79, file 620-08, DFRC.
161. Herbert Maier to the director, November 7, 1939, RG 79, file 620-08, DFRC.
162. Charles Richey, "Field Report, Plans and Design Division," August 14, 1939, RG 79, file 620-08, DFRC.
163. Superintendent, Southwestern Monuments, to regional director, November 3, 1939, RG 79, file 620-08, DFRC.
164. Form 10-352, RG 79, file 620-08, DFRC.
165. Form 10-352, RG 79, file 620-15, DFRC.
166. Form 10-768, Individual Building Data, and attached Maintenance Update Sheets; and "Custodian's Monthly Narrative, February 1957," Bandelier.
167. "Custodian's Monthly Narrative, March 1950," Bandelier.
168. Form 10-768, Individual Building Data, and attached Maintenance Update Sheets, Bandelier.
169. Form 10-768, Individual Building Data, and attached Maintenance Update Sheets, Bandelier.
170. "Custodian's Monthly Narrative, December 1938," Bandelier.
171. Form 10-768, Individual Building Data, and attached Maintenance Update Sheets, Bandelier.
172. Charles A. Richey, "Field Report, Plans and Design Division," July 15, 1940, RG 79, file 204, DFRC.
173. Tom Vint to regional director, June 11, 1940, RG 79, file 620-37, DFRC.
174. Regional Forester Saari, USFS, to regional director, NPS, March 1, 1940, RG 79, file 620-37, DFRC.
175. Charles Gerner, chief, Project Development Division, to superintendent, Southwestern Monuments, July 18, 1940, RG 79, file 620-37, DFRC.
176. Jerome Miller, acting regional landscape architect, to Regional Forester Saari, November 8, 1940, RG 79, file 620-37, DFRC.

177. L. Douglas, assistant regional director to Superintendent Miller, Southwestern Monuments, November 16, 1940, RG 79, file 620-37, DFRC.
178. "Custodian's Monthly Narrative, June 1942," Bandelier.
179. "Custodian's Monthly Narrative, January 1953," Bandelier.
180. Form 10-768, Individual Building Data and attached Maintenance Update Sheets, Bandelier.
181. Hugh Miller to Boss Pinkley, July 6, 1939, RG 79, file 204, DFRC.
182. "Custodian's Monthly Narrative, June 1941," Bandelier.
183. "Custodian's Monthly Narrative, August 1941," Bandelier.
184. Form 10-768, Individual Building Data, and attached Maintenance Update Sheets, Bandelier.

EXISTING CONDITIONS

THE SITE

General

A few site modifications have occurred over the years, some of which have slightly altered the character of the area. Despite these changes, the district retains nearly all of its original feeling and character (figure 141).

Although the physiographic features have remained the same, major changes have been made to the parking area. Landscape structures such as paving and curbing have been altered to accommodate changing visitor use or replace deteriorated material, or both. Through a long period of neglect, vegetation has overgrown original confines and encroached upon structures, visitor areas, and vistas. Exterior drainage has not been successful. A diversion ditch built to protect the rear of the cabin and lodge area is often overrun by heavy rains, causing talus slope movement, flooding, and subsequent seepage into the building walls.

Circulation

Although the entrance road has undergone only minimal change, parking in the headquarters area has changed over time to accommodate additional spaces. At first, this area had 27 parallel parking spaces. The diagonal parking capacity was increased by 40 cars by cutting into the center island.

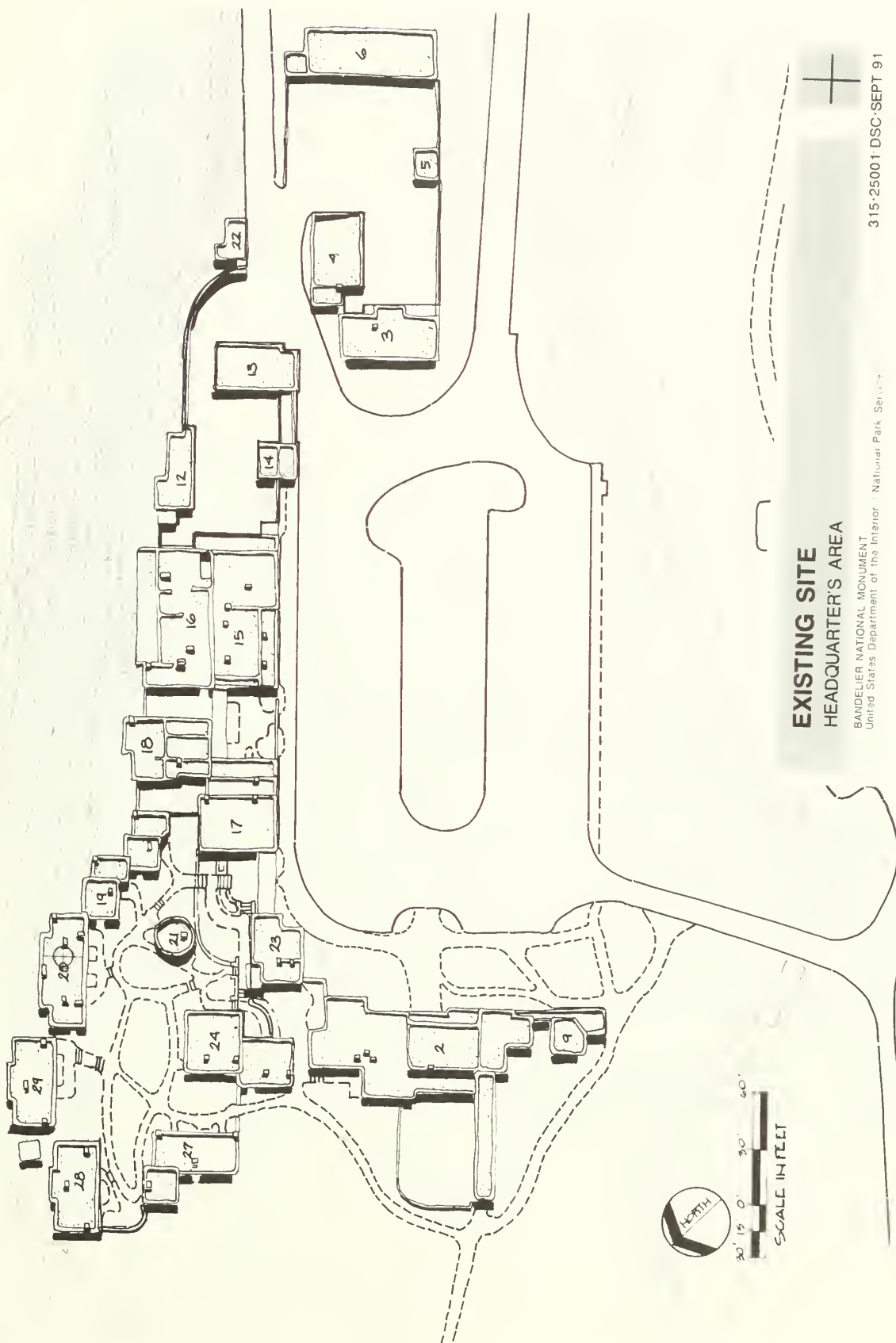
In general, pedestrian paths have retained their original configurations, although new ones have been added to accommodate changing functions and increased visitation. A new bridge, constructed in the 1950s, crosses the rito south of the location of the original bridge. This new bridge provides access to the picnic area and backpacker parking area in the former campground.

Landscape Structures and Related Features

The condition of the landscape structures varies throughout the developed area. Some replacement walls, steps, and flagstone areas look original at first glance, but critical examination reveals some differences.

Because of the degradation of the flagstone over time through spalling and chipping, and because of changes in configuration brought about by more recent construction, new areas paved with flagstone now exist (figure 142). The replacement flagstone does not match the original in color or shape. The sandstone replacement is much redder, and the paver sizes are larger.

Curbs have been replaced around the parking area. The general appearance of the new curbing is different from the original: it is a brighter color, and its edges are sharper than the original curb's.



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BANDELLER NATIONAL MONUMENT
United States Department of the Interior National Park Service

EXISTING SITE HEADQUARTER'S AREA



0' 10' 20' 30' 40'
SCALE IN FEET

Figure 141. Existing site map

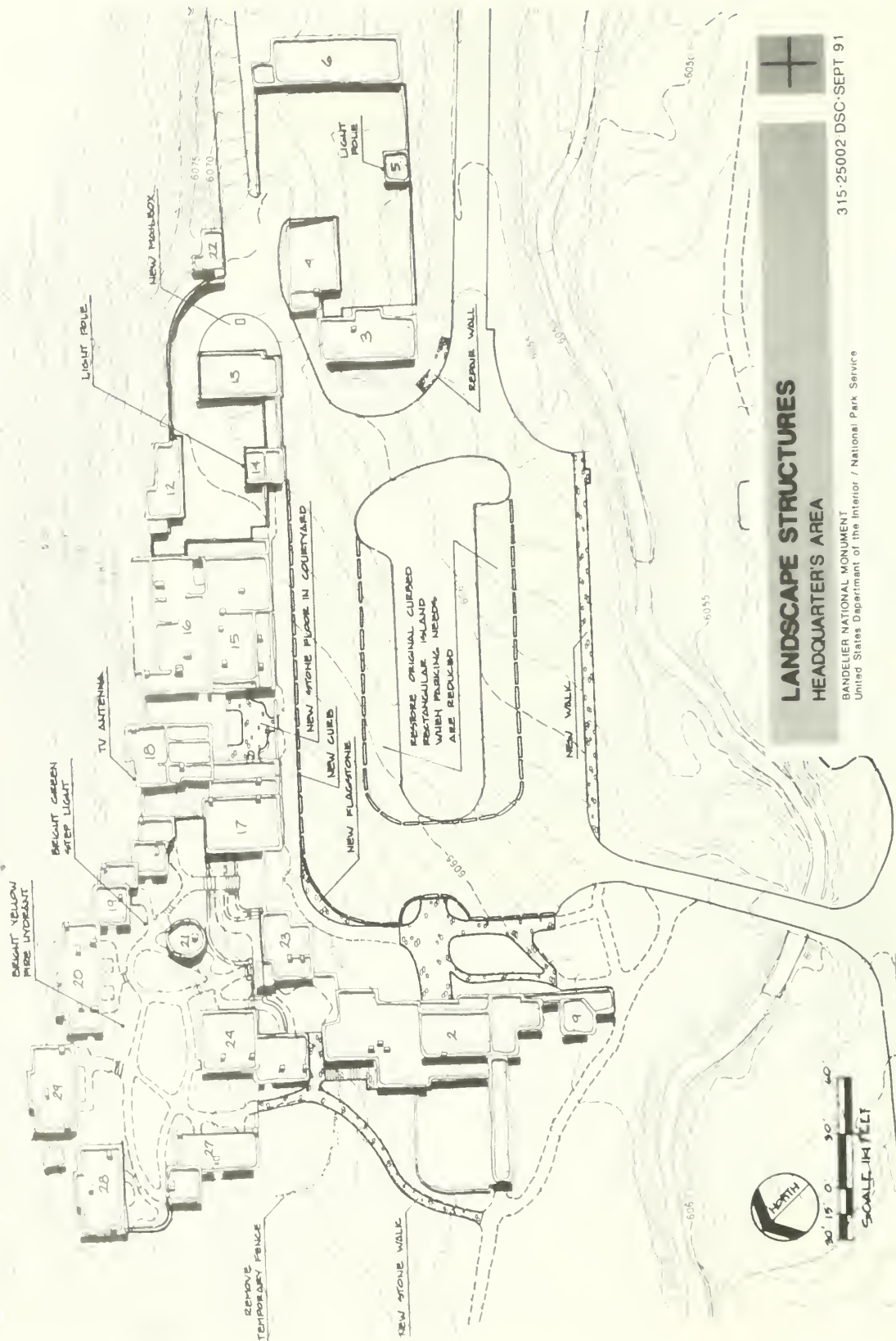


Figure 142. Landscape structures map

Several alterations to paths and paving materials have been made in response to a need for handicapped accessibility. A new surface has been added to the original walkway on the south side of the parking area. The original gravel walk south of the parking area now has a flagstone surface. The new walkway west and north of the visitor center is a gently sloped path that makes a portion of the cabin area accessible by wheelchair. A new brick walk and steps have been built north of the visitor center. The stone floor of the patio of the snack bar has been raised to accommodate wheelchair access to the snack bar.

In addition to paving, other historic landscape features still exist. However, some nonhistoric landscape features, such as bright yellow fire hydrants and green walk lights, have been added throughout the headquarters area. They are minor intrusions now, in the midst of the heavy vegetative growth, but as vegetation is thinned, these features will stand out much more. In addition, lights, tall light poles, and a television antenna show above the view of the historic facade of the administration building.

Vegetation

After passing various levels of aridity along the route to Bandelier National Monument, visitors form a first impression that this canyon is extremely lush. Dense growth dwarfs the buildings and hides the structures from the visitors' view as they drive down the approach road. This growth breaks up and masks the buildings mass and interrupts direct views of the cliffs that serve as backdrops to the masonry walls. Many trees are unusually heavily branched at eye level, and low shrub growth is quite dense. Much of the shrub growth is volunteer and has little historic value. This heavy eye-level growth, however, also hides the mass of automobiles in the parking area (figures 143 and 144).

This heavy vegetation causes several problems. The dense shading of wood architectural features causes deterioration of wood members, which can lead to insect infestation and rot. The roots of trees and the trees themselves press against buildings and crack the stone walls. In addition, the dense shading slows the drying of wood and masonry surfaces.

Although the refined lawn at the visitor center provides a green carpet for visitor use, research has shown that the lawn is native grass gathered by Fulton and his crews from the mesa top. It has gradually taken on a dense sod appearance from watering and fertilizing. The lawns in the cabin courtyards and around the residences have been similarly altered, but to a lesser degree.

Much of the shrub growth and box elder tree growth is volunteer. Because historical information on plant materials that the CCC used was limited, we can only surmise the extent and type of vegetation at the close of the CCC efforts. The plant lists give us the scope of the available plant material.

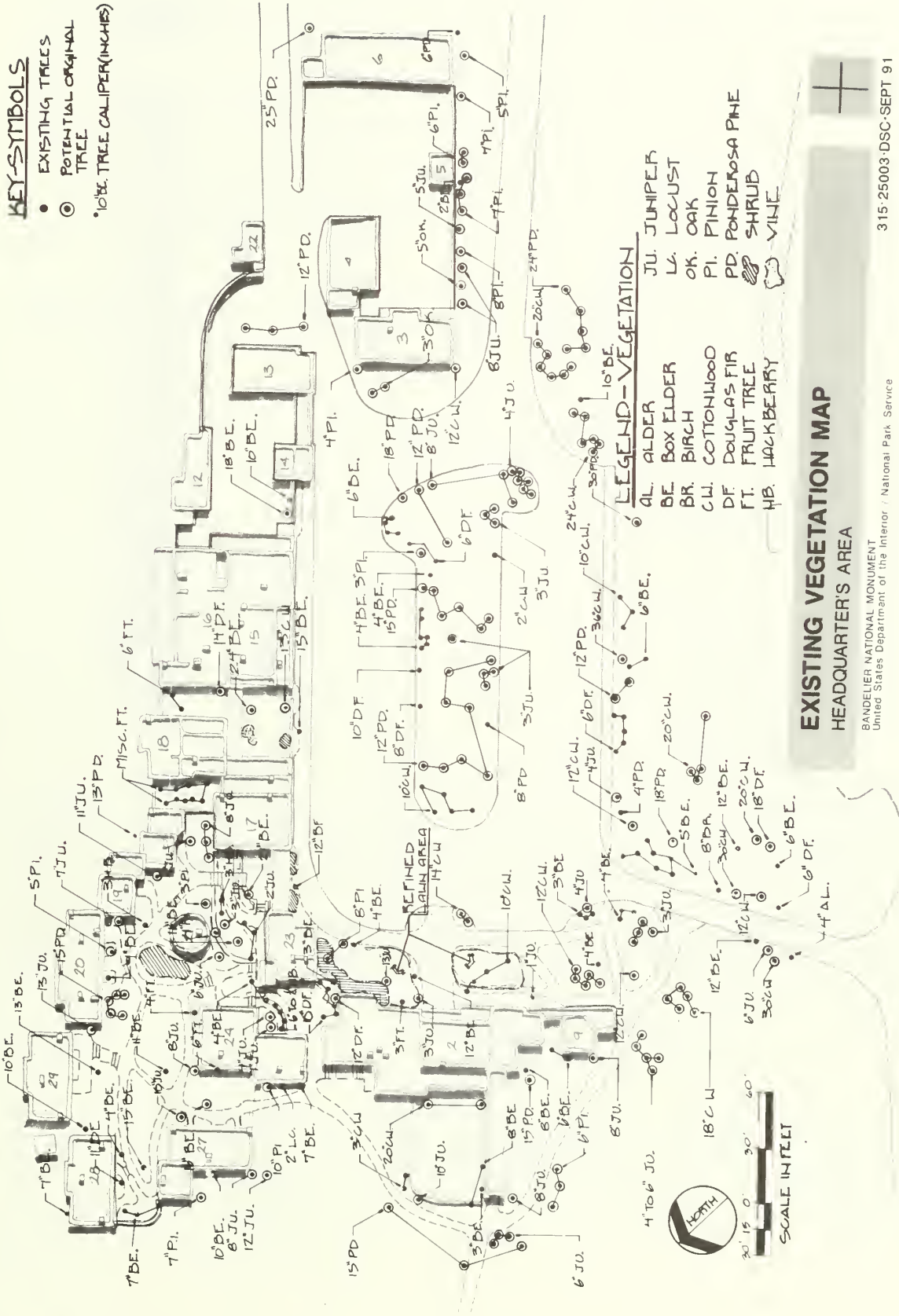
A list of existing trees covering the compound and residential area has been developed (see appendix A). Their location and caliper have been indicated on maps of the various areas (see figure 145).



Figure 143. The front facade of the visitor center at the original drive-through, 1940. The opening has now been filled in. Many evergreen trees and native grass have been replaced with rank deciduous trees and refining lawn.



Figure 144. The front facade of the visitor center, 1988. Note the dense growth hiding much of the architecture.



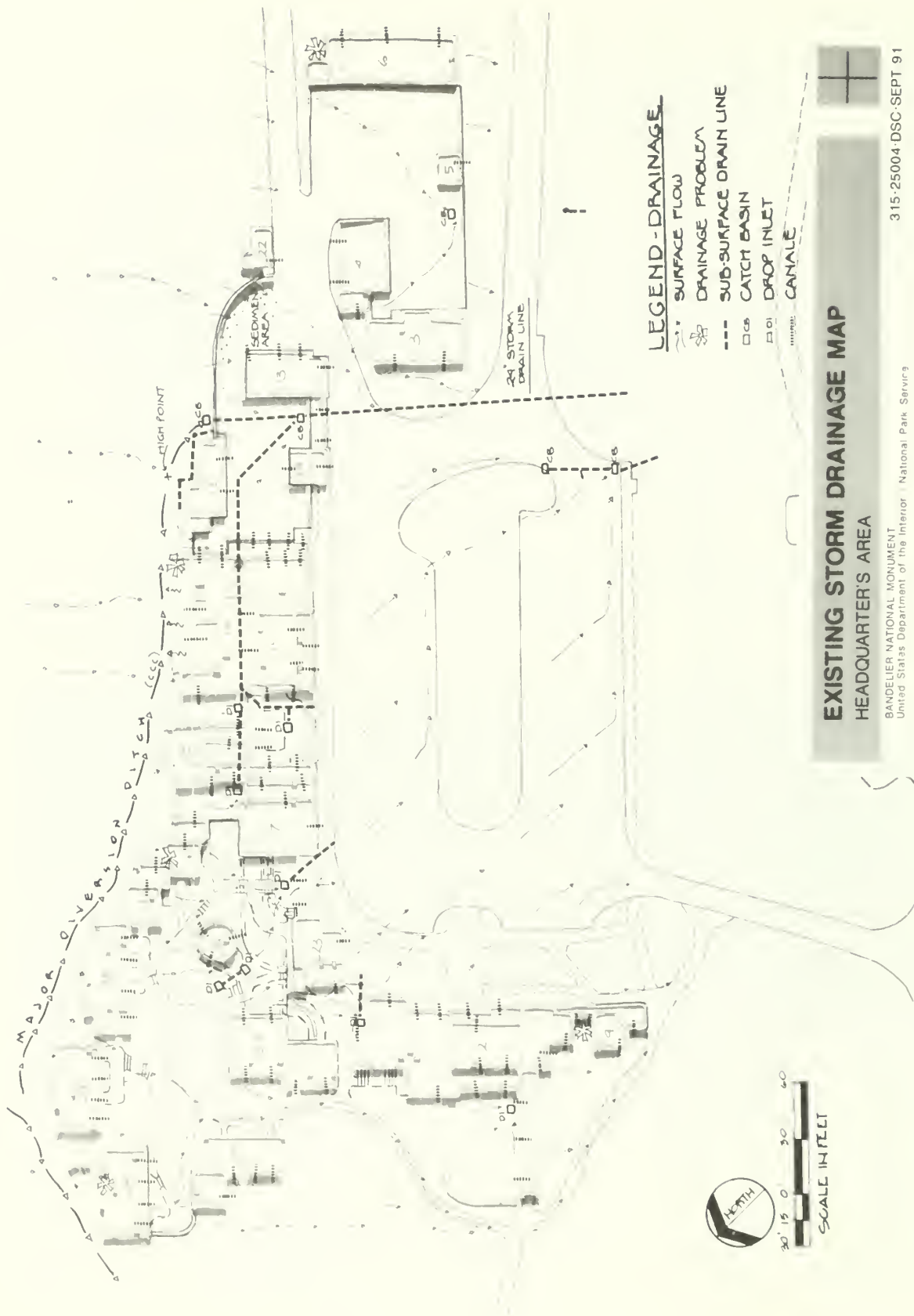


Figure 146. Existing storm drainage map

Some existing trees were found to have been planted originally by the CCC plantsman; it is recommended that they be held in higher esteem than recent volunteer plants. To determine which trees were original (either planted or undisturbed) to the CCC era without the benefit of initial planting plans or plant lists, various techniques were used.

One technique was to compare existing trees with those in early 1940s site photographs. These same trees then become a standard minimum size for other trees in the area.

A second technique was to determine the largest caliper per species that can be moved with a maximum ball size of 3 feet and then add the appropriate growth rate to this size to arrive at the trunk caliper expected today. Each species, of course, has a slight variance above and below the average trunk caliper.

This reasoning, coupled with interviews with the forester in charge of the CCC-era planting, led to the following list of probable original trees.

| Trees | Minimum trunk caliper (inches) |
|----------------|-----------------------------------|
| Box elder | 16 |
| Cottonwood | 12 |
| Douglas fir | 12 |
| Juniper | 3 |
| Oak | 3 |
| Piñon pine | 4 |
| Ponderosa pine | 12 |

This classification is judged 90 to 95 percent accurate and will probably remain so unless original planting plans or plant lists are uncovered. If discrepancies between recent and original trees occur, they will be at the gray area or break point in trunk caliper sizes. Factors such as growth stimulants and growth constraints affect the growth characteristics of these trees.

Based on this breakdown of tree age, approximately 60 percent of trees in the headquarters area (see figure 145) are of the CCC era. Of course, many more trees were planted but succumbed to disease, drought, and human hands.

Drainage

The diversion ditch uphill from the northern tier of cabins currently does not drain to the catch basin. The ditch is so porous that even a downpour immediately percolates into the ground. In addition, major downpours create a soil erosion condition that fills the ditch and the courtyards. In view of the porosity of the soil on this slope, moisture should percolate down to bedrock. However, in some isolated areas it does not percolate, and moisture seeps into building walls. The subsurface soil under the trench is a maze of utility lines (see figure 146).

Foundation problems and their probable causes are as follows:

In B-2, walls are wet because water is concentrated between buildings.

In B-6, wet walls and viga deterioration have been caused by reverse grading.

In B-16, wet walls are caused by water sheeting off the new roof and percolating to the base of the wall. The diversion ditch runs the wrong way here.

In B-19, a major problem with wet walls is caused by the canale that drains to the northeast side of the building, where water ponds and percolates down outside the building.

In B-23, wet walls are probably due to water draining to the hole adjacent to the building wall and to bad grading.

Sheet drainage from roofs via canales generally works well. Where roof drainage pours into large courtyards, the drainage usually works. Canales that empty into tiny courtyards have flooding problems because the inlet openings in the drainage pipes are small. Drop inlets have been provided, but generally they are not directly under the canale. The resultant solutions are makeshift piping and eroding gullies. This problem apparently was recognized in the 1940s; additional drop inlets and lines were proposed but never installed.

The historic drop inlets tie into 6-inch vitrified clay pipe, which is susceptible to clogging, is hard to clean out, and could overflow in a heavy rain.

These drainage lines run between drop inlets in courtyards to parking areas or tap into major drain lines. They are too few, undersized, and inaccessible. One of the lines – a 24-inch concrete line – serves its function well and could be better used.

Drainage across parking areas and roads has not been a problem, and maintenance requirements are minimal.

Site Character and Perceptions

Cabin Courtyard

Appearance

Trees have been located with a purpose in mind.

Shrubs are overgrown and dense.

Deciduous trees are overgrown and in some cases are too close to walls.

Flagstone paving and steps are in good condition and are excellent examples of CCC work at its best.

Step faces are painted in yellow.

Rock ledges are built as designed.

Nonhistoric landscape utilities are brightly painted.

Grass is a bit scruffy, but because it is native, scruffiness is probably appropriate.

Planter beds are weedy and overgrown.

Vistas are obscured.

(See figure 147.)

Character

This is the most carefully designed landscaped area at Bandelier.

The upper area has treed edges and nooks with open centers.

The lower portion is more densely planted, perhaps to provide shade for the lower courtyard.

Careful attention was given to stone structure proportions and craftsmanship.

Perceptions

Thin the tops of trees for improving the view of the cliffs from the parking area.

Do not alter stone work, stone proportions, or stone color (remove step-edge yellow paint).

The original evergreen trees should be replaced as needed in kind and in the same location.

Deciduous trees should be individually thinned by one-half.

The original deciduous trees should be replaced in kind in the same location if they are well away from buildings and walls.

The total number of deciduous trees in the lower portion should be about one-half the number now present.

(See figure 148.)

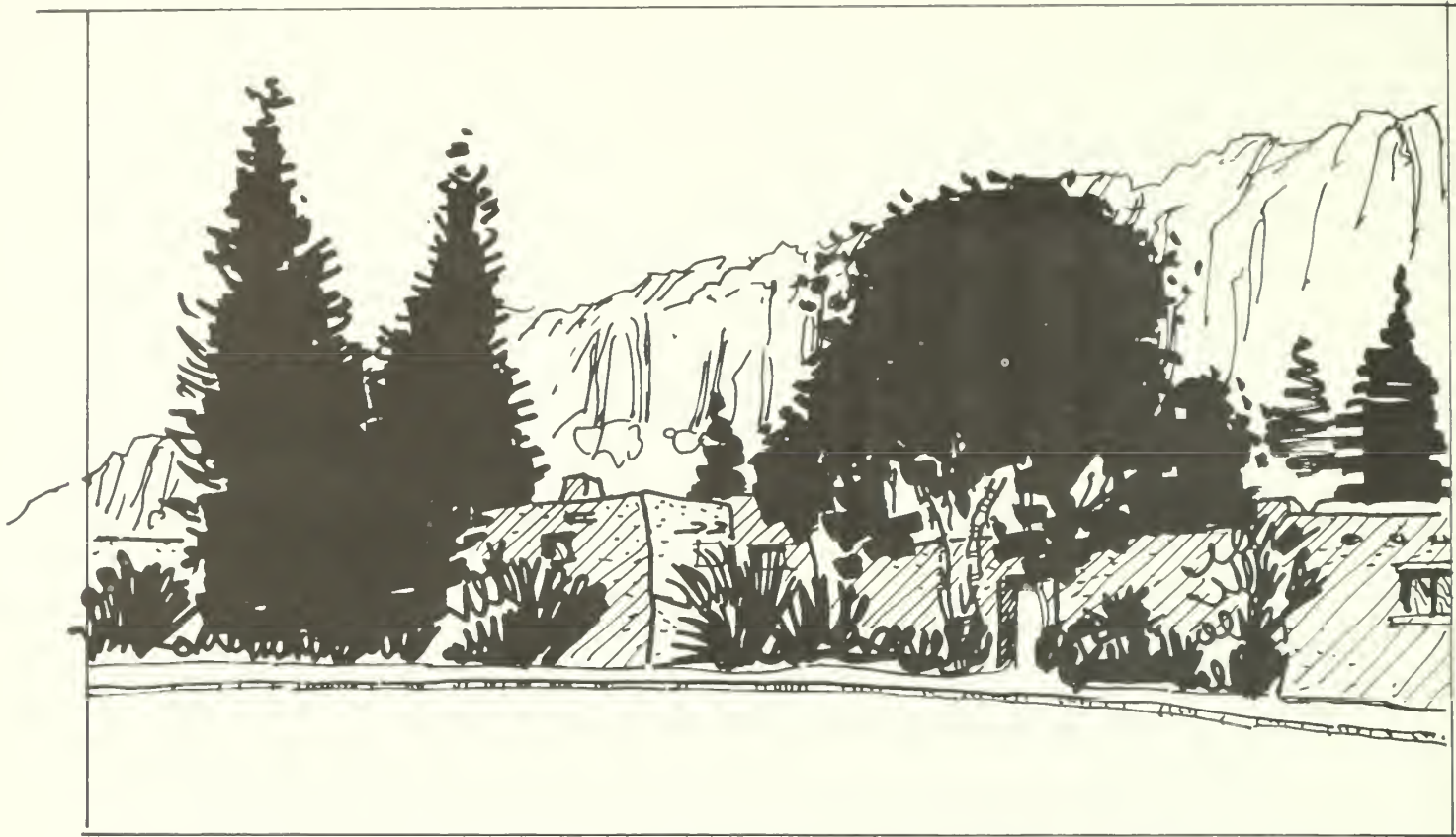


Figure 147. Existing appearance of the cabin courtyard facade.

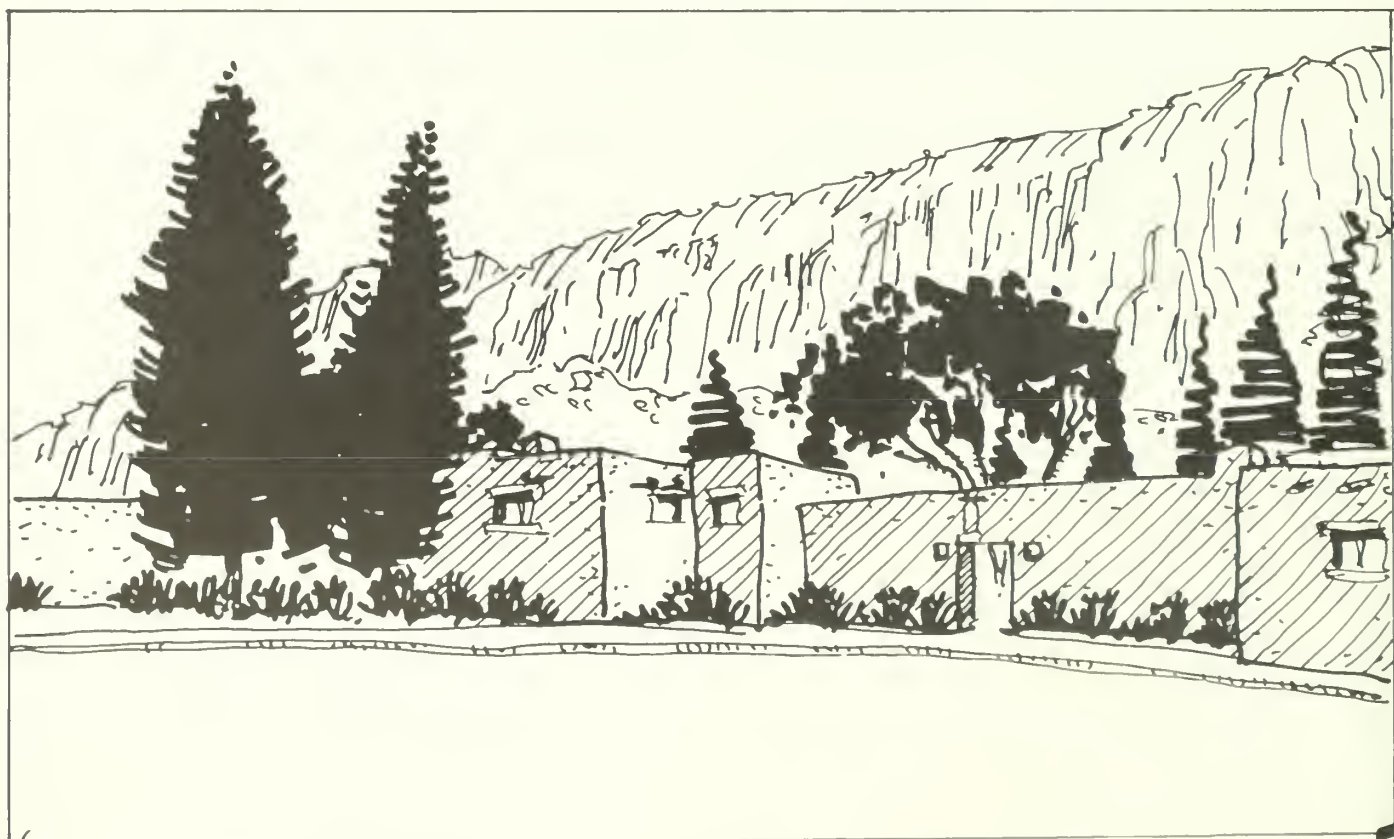


Figure 148. Recommended appearance of the cabin courtyard facade.

Miscellaneous Courtyards

Appearance

Both of Mrs. Frey's courtyards are small and surrounded by walls.

Both are heavily planted; the front court has an amazing number of fruit trees, much ground cover, and good examples of English ivy on the walls.

Roof canals flow into and through both courts using gutter downspouts.

The cafe court is paved and surrounded by walls and buildings. Shade trees exist.

Cars in the parking area are within view over the outer wall, which has been lowered.

Ground cover is mostly soil with some of lilies and flowers.

(See figure 149.)

Character

Mrs. Frey's courts are very enclosed and overgrown. The landscape structures are undersized. Water is a design element of the courts.

The cafe court is large and dependent on shade and ground cover of low plants and flagstone.

Perceptions

Mrs. Frey's courts represent her love of fruit trees and should remain tightly planted.

Until we can analyze her importance to Bandelier, we should not alter these courts greatly.

Minor improvements to drainage and removal of one or two small fruit trees (which could have an effect on facility degradation) are acceptable.

The cafe court trees should be thinned at the top to open the view of the cliffs from the parking area.

The fruit trees should be pruned in a horticulturally acceptable manner.

(See figure 150.)

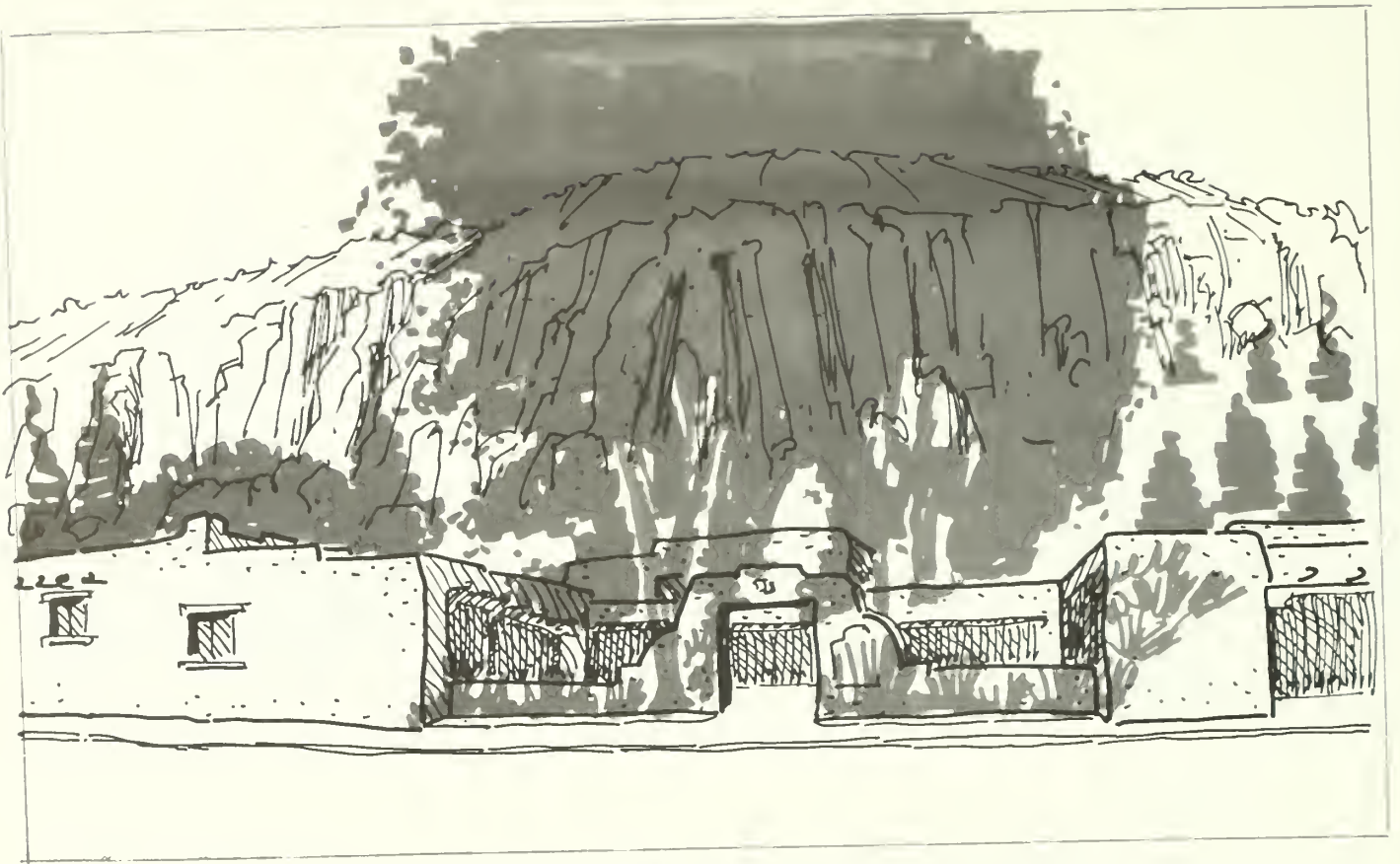


Figure 149. Existing appearance of the cafe court facade.

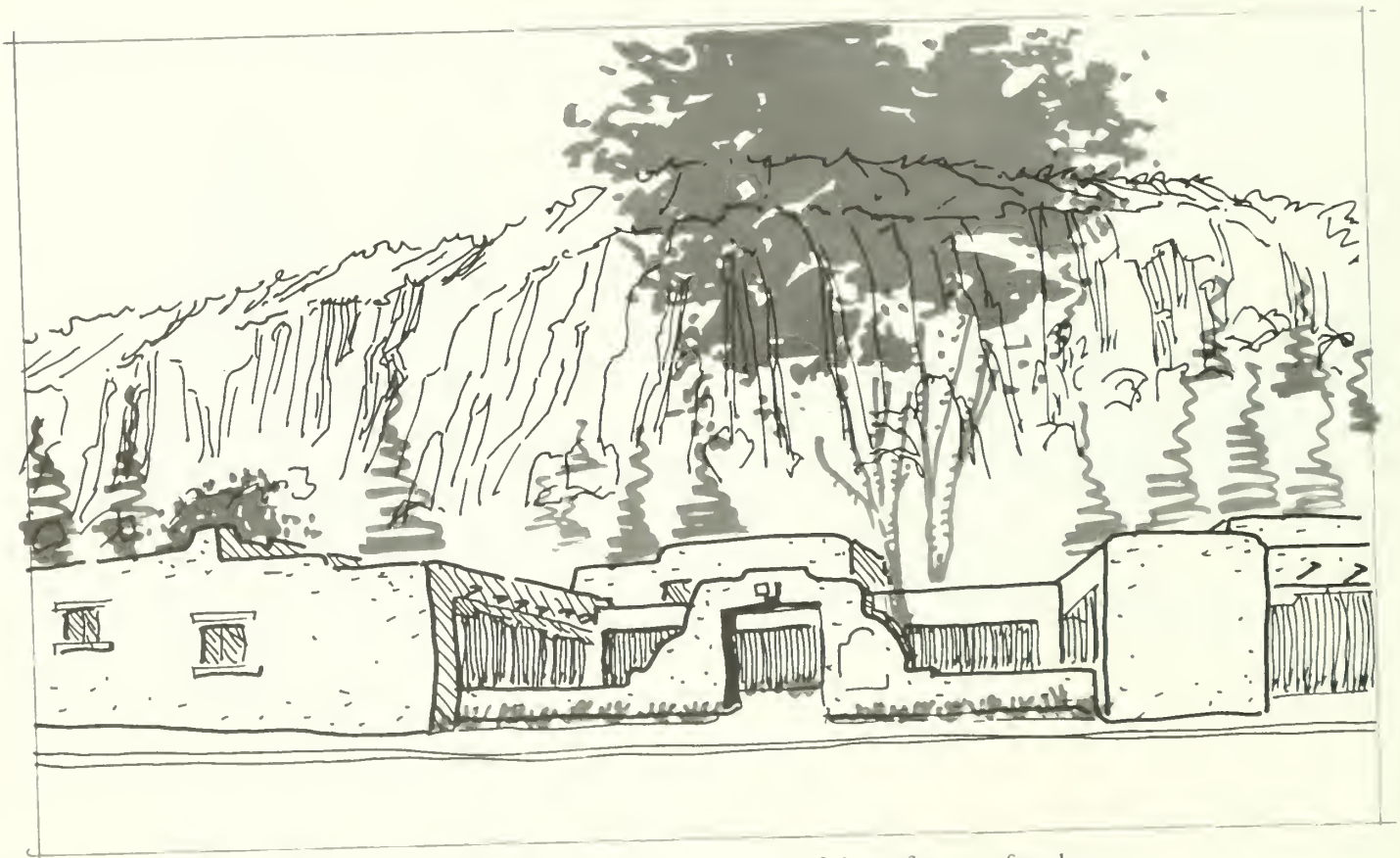


Figure 150. Recommended appearance of the cafe court facade.

Parking Island

Appearance

The effect is of high forest with little underbrush.

The ground is worn by the movement of visitors crossing through the island.

The initial view down the entrance road focuses on autos because of the island change and the lack of screening in the island.

The curbs are crisp and new.

Character

There is a high forest effect with a slightly tight spacing of trees.

Planting, primarily of evergreen trees, is naturalistic.

Early photos show more shrubs in the planting.

Perceptions

Forest effects should be retained by replacing the original trees in kind in the same location.

Shrubs should be added to the edges to screen autos at visitor eye level.

Signage at the entrance should be simplified.

Vegetation and stabilized surfacing should be used to organize pedestrian traffic across the island.

Visitor Center and Administration Building Front Facade

Appearance

Most of the building arcade is hidden by vegetation.

Up-valley and cliff historical vistas are hidden by dense, branching, deciduous trees and shrubs.

The mass of plants is unorganized.

The dense vegetation allows little chance to assess the relationship between the masonry and the cliffs.

(See figure 151.)

Character

Strong, upright deciduous tree masses are giving shade.

The historically outstanding building edges and shapes contrast with the irregular cliff patterns.

The historical appearance of primarily evergreen trees, rather than deciduous trees, no longer exists.

Perceptions

The number of deciduous plants should be reduced.

Branching of trees should be reduced to allow views up valley and of the surrounding cliffs.

The number of cottonwoods and box elders should be thinned by half.

The lawn should generally return to a semiarid historic appearance.

The planter areas on the parking-area side of the stone walls should be planted with identical plant material to present a unified base for the expanse of walls.

All obtrusive utility features, such as light poles, television antennas, and polyvinyl chloride (PVC) pipe outfalls, should be removed or reduced.

(See figure 152.)

Visitor Center Rear Facade

Appearance

There is a back-alley effect on the south side: trash, sucker growth, and firewood piles.

A temporary visitor control fence is in view north of the visitor center and is an intrusion to the historic site.

Deciduous plants are overgrown.



Figure 151. Existing appearance of the visitor center front facade.



Figure 152. Recommended appearance of the visitor center front facade.

Character

The rear is more sparsely planted than the front of the visitor center.

There are high, arching cottonwoods with a framework of juniper.

Perceptions

Original trees should be replaced with the same species.

The cottonwood limbs that overhang buildings should be removed.

The box elder stumps should be removed.

A juniper screen should be added to the north and south of the visitor center.

The nonhistoric brick walk and steps at the north side of the visitor center should be removed.

Creekside

Appearance

The vegetation is natural to the valley floor: high, arching cottonwoods; a strong vertical of ponderosa pine; and minimal number of low trees and shrubs.

Some visitor pressure is apparent from the spontaneous paths that have been worn into stream banks.

Character

There is a naturalistic mixture of valley floor and riparian vegetation.

Perceptions

Replanting should be done with the same plant material and same density as the valley floor (this appearance was held in high esteem by the early CCC designers).

Barrier-plant some of the worn stream banks with shrubs.

Protect any historic remnants of bridge and camp.

Maintenance Area Facade

Appearance

Dense planting covers the entire length of the masonry facade. Visitors see the masonry walls before they see the headquarters area.

Low walls and horizontal rock ground cover (riprap) have been covered by debris and soil.

The new mailbox has an adverse effect.

Character

The wall is strongly architectural and well proportioned.

Original evergreen trees are located in key areas.

Stone curb and rock riprap are strong accents, especially at the corner of the facade.

Existing planting depends on tall trees to balance the creekside forest.

Perceptions

Deciduous shrubs screening the facade should be thinned out.

The lower branches of the evergreen trees should be trimmed to expose the masonry wall, particularly at wall corners and areas of architectural significance (vigas and windows).

Gradually replace the original trees in kind and in the same place. Use the largest plant material available.

Residential Area

Appearance

The sidehill vegetation consists of ponderosa pine and juniper.

The residential units are well sited with properly sited road and parking (a good example of CCC design).

Refined lawns appear out of place and are the result of irrigating and fertilizing native grass.

Character

There is naturalized vegetation of mixed pine and juniper.

The siting of structure is outstanding.

Perceptions

The original trees should be replaced in kind, at the density of the surrounding forest.

Fertilizer and irrigation should be cut back to maintain a sod law that does not appear lush.

If use of this area changes, road width, parking spaces, and signage should not change. The area is in excellent balance now and should not change.

Entrance Station

Appearance

The station is devoid of planting but surrounded by forest, as was historically intended.

Character

It is an isolated structure in the midst of a forest road.

Perceptions

The station and forest should be retained as is.

Nature should be allowed to take its course in revegetating the adjacent forest.

Comfort Station

Appearance

The siting is wooded, with much attention to drainage.

There are signage intrusions.

Character

The setting is naturalized.

Perceptions

Vegetation should be replaced in kind and at the same density as the surrounding forest.

Rock work and drainage swales should be replaced as designed.

Signage should be thinned.

UTILITIES

With the recent utility work that has been completed, the buildings' engineering systems are adequate for current use. However, with the possible adaptive use of several buildings formerly proposed under Package 224, units B-23, B-24C, B-24D, and B-29 will require rehabilitation of the gas and water pipes. Similar electrical, water, or gas utility requirements, or all three, may also be required in the remaining units affected by this package. One area of apparent deficient utilities is the pipe servicing the fire hydrant adjacent to B-7.

The routing of utility upgrade projects over the years, primarily electrical and heating, ventilation, and air-conditioning (HVAC), has often been poorly planned (figure 153). Because not all utilities can or should be embedded or buried, increased consideration should be given to their routing, possible consolidation, and ultimate visual impact.

Asbestos has recently been discovered on B-2 and B-32's furnace ductwork. Los Alamos Laboratory is currently undertaking a building-by-building survey to determine the breadth of this material's existence and condition. Upon receipt of this report, appropriate treatment can be developed. The presence of asbestos is not in itself cause for action. It is the type and condition of asbestos-containing material and its fiber-release potential that require identification and possible remedial treatment.



Figure 153. Rear of B-16, showing clutter of electrical and gas conduit and HVAC ductwork. (Photo: Copland for NPS)

BUILDING COMPONENTS

Because of the timing of this report's completion (in relation to actual rehabilitation work), existing conditions are discussed in terms of both general conditions before Package 224 rehabilitation projects and conditions found today. Actual package-funded construction commenced in fiscal year 1982 with the first of several contracted utility projects and continues periodically on miscellaneous wood repairs through Southwest Region Cultural Resource Center day labor. In addition to congressionally allocated funding, approximately \$75,000 was raised through private donations to the National Parks and Conservation Association. These park, region, and DSC projects included the following:

Rehabilitate Water, Sewer, and Electrical Services (drawing 315/41,008A)

Install Insulated Windows (drawing 315/80,026)

Renovate Electrical and Gas System (drawing 315/41,009)

Renovate Water System (drawing no. 315/41,010)

Install Insulated Windows (drawing 315/41,012)

Replace Canales and Miscellaneous Roof Repairs (drawing 315/80,030)

Rehabilitate Vigas, Columns, and Miscellaneous Wood Members

Replace Flagstone and Curbstone

Install Fire and Intrusion Alarm System

Components of this report have been previously submitted and approved for much of the work undertaken to date.

Because of continued occupancy and maintenance, the buildings are in generally sound condition. The buildings retain much of their original fabric and most of their original design integrity. However, certain deficiencies of material or design or both require treatment to ensure the buildings' continued preservation and historic character. Because the buildings are similar in design, construction materials, and condition, existing conditions are discussed by building component rather than by individual building.

Roofs

Except for B-30 and B-25, all the original structures retain their original shed roofs drained through canales; later additions have retained shed roof designs. B-30's original mineral roll roofing has been replaced with asphalt shingles; B-25's canales have been removed along the south elevation and a metal gutter has been installed. The infill roof connecting B-15 and B-16 (over the former terrace) has a shed roof draining into two internal drain lines. B-1's rear parapet has been removed and metal drip flashing has been installed (figure 154).

All the original composition roofs had been previously replaced, some as early as 1946 and others as late as 1962. Except for B-30, all roofs were replaced again in 1980. This work consisted of removing the existing roofing and exposed metal flashing, installing 4 inches of sprayed polyurethane foam insulation, and using a class A, 30-mil, spray-applied Gacoflex U-66 series urethane coating over the roof and parapets.

This system initially had extensive pinhole leaks and surface blistering. Many of these leaks apparently resulted from deficient mixing of the various mix components and resulting gassing-over of microvoids at the foam surface; these pockets eventually broke, causing a loss of substrate for the urethane. This loss of bond in turn produced holes in the system and points of leakage. As in most roof systems, the blisters had resulted from inadequate bonding and entrapped air. These conditions were supposedly corrected under manufacturer warranty in 1987, but leaks are still present.

Today, other than these continuing leaks, the primary area of concern with these roofs is the condition of the underlying sheathing and the parapet seal (see "Walls"). In at least one known instance, B-21, severely rotten sheathing and wood deterioration in the skylight framing were not replaced before the roof was installed. Similar, but less serious, conditions have been encountered during recent wood and roof repairs. Additional areas are suspected to have deteriorated but are difficult to assess or verify in a nondestructive manner.

Other conservation concerns with this roofing system or its application or both are as follows (figures 155-157):

- It raised some roof levels to a point flush with the bottom of vigas at intermediate roof parapets, resulting in increased water exposure and a denial of the drying effect of air movement.

- Extensive colonies of ants have been uncovered living in the foam.

- It provided a questionable terminal seal at the parapet copings.

- The material encapsulated utility lines running across the roofs or parapets, making their future repair or removal more difficult and costly.

- It lessened the throat opening at canales and scuppers.

- It closed off some roof vents and changed the configuration of the parapet coping so that water drains onto exterior wall surfaces rather than onto roofs.

The roof surface throughout the building complex is a strong visual component from the approach drive. This new roof membrane was often applied as an attempted parapet seal as well. Its extension over the parapet coping is highly visual from below, unlike a traditional, flashed, built-up roof. Added to this visual incompatibility and the other problems cited is a major concern with the material's long-term performance. This coating is easily punctured by foot traffic or fallen tree limbs. In addition to allowing leakage, this puncturing exposes the underlying foam to degrading ultraviolet light and apparent insect intrusion.

By contrast with the above system, roof repair work executed to date under this package has used a 15-year, warranted, 45-mil, ethylene propylene (EPDM) roofing membrane, manufactured by Carlisle, with copper counterflashing. This repair has occurred on B-13, B-21, and B-26, B-7 and B-11's woodsheds, B-23's porches, and the B-29 portal, and for flashing at all replacement canales (figures 158 and 159). A gravel-ballasted system has been used to provide the required ballast and also to restore the buildings' graveled roof appearance. One dilemma in the further use of this system is the required ballast weight. A traditional composition roof weighs approximately 4 pounds per square foot; fully ballasted membranes require 10 pounds. Loading capacity is easily calculated for those buildings on which the exposed (from below) viga is also the roof rafter. On the remaining buildings where a secondary rafter system of 2x's exists (figure 160), this calculation requires no destructive investigation. Of this latter system, only B-27's actual framing system has been viewed. In this case, the secondary rafters were of varying lengths scabbed together. Because of the budgetary limitations on the buildings' original construction, it is suspected that this scabbing may well be a common occurrence. Because of a limited loading capacity in these situations, a fully ballasted membrane is a suspect alternative for future roof work without extensive rafter reinforcement or replacement; however, other methods of EPDM roof attachment exist that do not pose major concerns for structural capacity.



Figure 154. Rear (south) elevation of B-1, showing removed parapets and roof gutter modification. (Photo: Copeland for NPS)



Figure 155. B-15/16 roof, showing spray membrane on parapets, 1984. Note several park efforts at sealing leaks. (Photo: Thorson for NPS)



Figure 156. Blistering of roof membrane, B-13/14 portal, 1984.
(Photo: Thorson for NPS)



Figure 157. Roof over B-2 rear portal, 1985. Note embedded utilities, spray membrane on parapets, and fallen limbs. (Photo: Copeland for NPS)

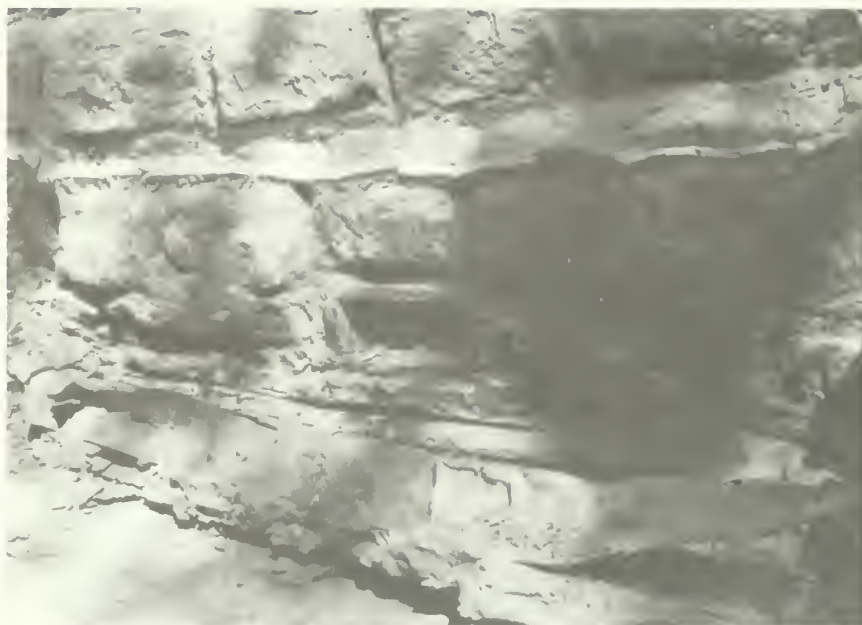


Figure 158. Roof replacement underway at B-29 portal, 1986. Note original roof vent covered up by membrane application to parapet. (Photo: Hose for NPS)



Figure 159. New ballasted roof on B-21, 1985. (Photo: Copeland for NPS)

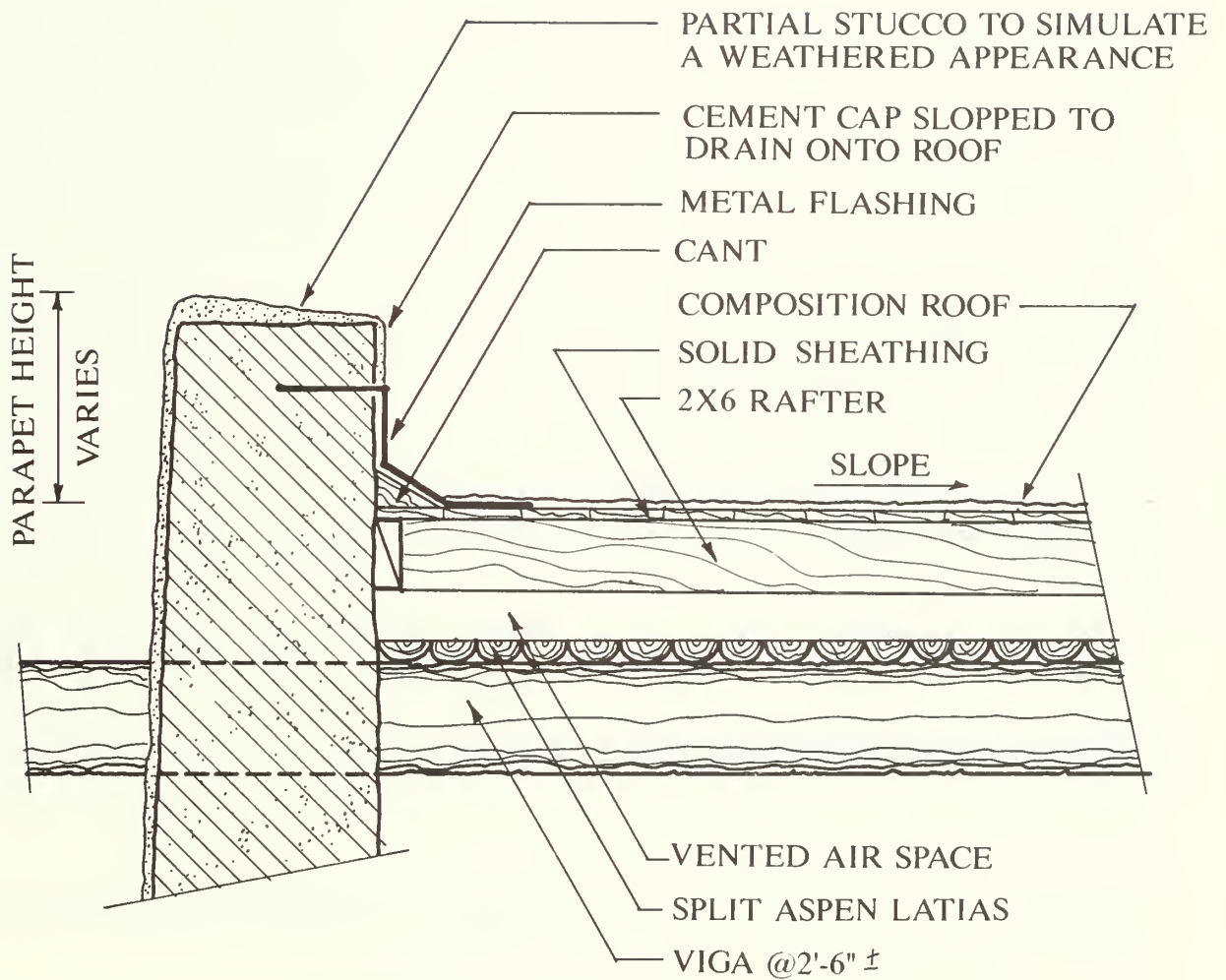


Figure 160. Typical original parapet and roof framing detail with secondary roof framing.

Vigas, Canales, Columns, and Lintels

At the outset of Package 224, the most critical deterioration concern on the buildings was deteriorating wood – primarily vigas, canales, and columns. It was this "Rehab Decaying Structural Members" that was identified in the project's initial 10-238. Earlier applied oil preservatives had been lost over the years, and exposure to rain and snow had promoted an environment of decay and fungal attack. Natural checking within log members had only aggravated this condition. Most of the viga deterioration was limited to the exposed areas, but a number of vigas had deteriorated through the wall and therefore deprived the member of its structure-bearing integrity (figures 161-163). Many of the original viga ends had been periodically replaced over the years. The prevalent method had been to remove the exposed deteriorated end or stub and mortar a new stub in place. Many of these stubs had since become loose and fallen (figure 164). Another technique was to use opposing lag screws welded to a base plate as a method to attach the new stub to the original viga (figure 165). On B-1, B-6, B-7, and B-26, some or all of the exposed ends had been removed and the resultant void filled in with a mud mortar similar to the original plaster (figure 166). Similar deterioration was occurring on the majority of canales. Many of the portal columns were decayed at their bases, primarily because they were embedded in adjacent masonry surfaces that trapped both moisture and soil (figure 167). From the crushing of this rotten wood, several of the overhead parapets were deformed, particularly the B-29 portal. Many of the edge latias and window and door lintels had similarly deteriorated (figure 168). Much of the lintel decay was caused by moisture running down the masonry wall and wicking into the wood.

Following the approval of various work proposals developed as components of this historic structures report, repair work was initiated in 1986.¹ All existing canales were replaced with an EPDM membrane that extended the copper canale flashing onto the roof and parapet (figure 169). This work was done on 115 canales, 87 by contract and the balance through regional day labor forces. The EPDM membrane was applied both as additional flashing and as a potential base for future roof replacement.

Canale scuppers at intermediate roof parapets were replaced with 6-inch PVC scuppers on B-18 and B-32; on B-19, two scuppers were completely removed and flashed with spray urethane. Masonry over some of the canale openings had been previously removed on B-13, B-17, and the B-15/16 portal, presumably to lessen ice buildup. During this canale work, the masonry was restored on B-13 only; to do so on the remaining areas would have involved impact on the existing roofing and extensive flashing repairs.

Except for B-25, all vigas, columns, edge latias and lintels were inspected, and where they had deteriorated they were replaced in kind or repaired. This work was also done by regional day labor forces. Viga repairs consisted of

- full replacement in kind where deterioration had significantly penetrated the building interior (B-13, B-21, and B-8's woodshed)

- structural epoxy repairs where deterioration had penetrated the building interior but the log perimeter shell was sound (B-21)

- replacement of all deteriorated ends

patching with flexible epoxy at areas of minor surface deterioration

replacement of missing or fallen vigas

B-26's vigas had previously been removed to lessen potential impact from passing vehicles. Because of the significant role this building plays as the initial visual component of the park, these members were reinstalled but with a shorter extension than originally to avoid hitting increasingly larger recreational vehicles. The predominant system of attaching these new ends was the "viga splice" method using fiberglass rods and epoxy, a system reviewed and approved under the preservation plan prepared for this work² (figures 170 and 171). Through several years of working with this technique, an additional technique of casting threaded fiberglass rods into the stubs was developed and used on B-28 and B-29. Records were maintained on the technique used for all repairs, records that will be included with the project as-built drawings and the historic structures preservation guide for the buildings. Deteriorated columns were replaced in-kind but with a modified base detail using a raised concrete pad with an embedded drift pin connector.

On new wood, members were sized to match the original. Exposed surfaces were drawknifed to simulate the original finish, exposed viga ends were given the original axed finish, and, except for B-28 and B-29, the wood was pressure treated with chromated copper arsenic. Originally, exterior wood was apparently left unstained, but by the 1940s, preservative treatment was initiated. Currently, the majority of all exterior structural wood has a dark stain attained from a variety of opaque stains and oils; portal ceilings and interior woodwork are primarily unstained but have achieved an aged, natural patina. For new replacement wood, with the exception of B-28 and B-29 (where limited staining exists), staining was deemed appropriate to blend the new with the existing exterior woodwork. In addition, staining alleviated the green color resulting from the chromatic copper arsenic treatment. Before staining, the treated wood was scrubbed with a 50 percent bleach solution, rinsed, and allowed to dry as long as possible. In areas of total viga replacement, interior exposed surfaces were left natural to blend with adjacent vigas, and the exposed end was spliced like other viga splice work.

Two additional areas warrant mention. Two viga ends have been removed from B-2 to allow hanging of the visitor center sign; a metal pipe "flying canale" has been added to one of the canales of B-18 to extend drainage farther from the building wall. In both cases, a more sensitive response to the issue at hand could and should have been pursued.

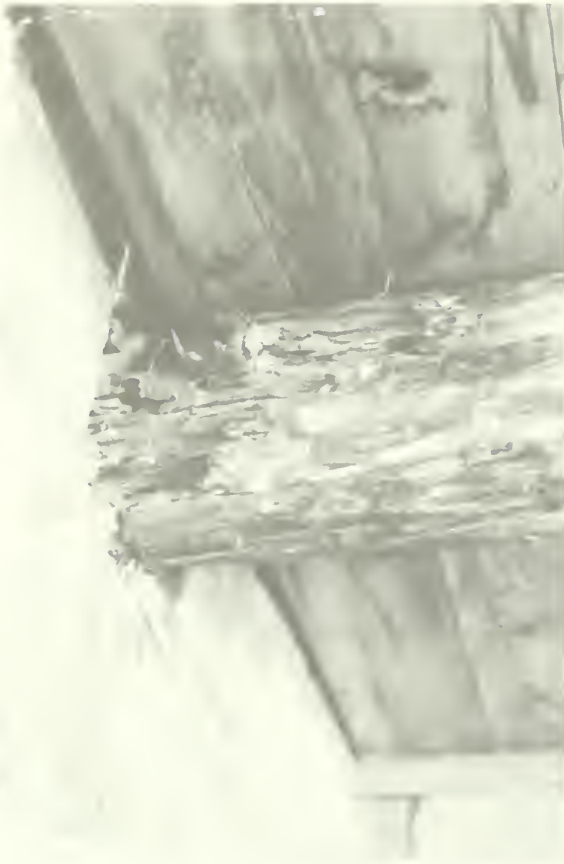


Figure 161. Viga deterioration through the wall of B-13 poses the potential for structural failure, 1984. (Photo: Copeland for NPS)

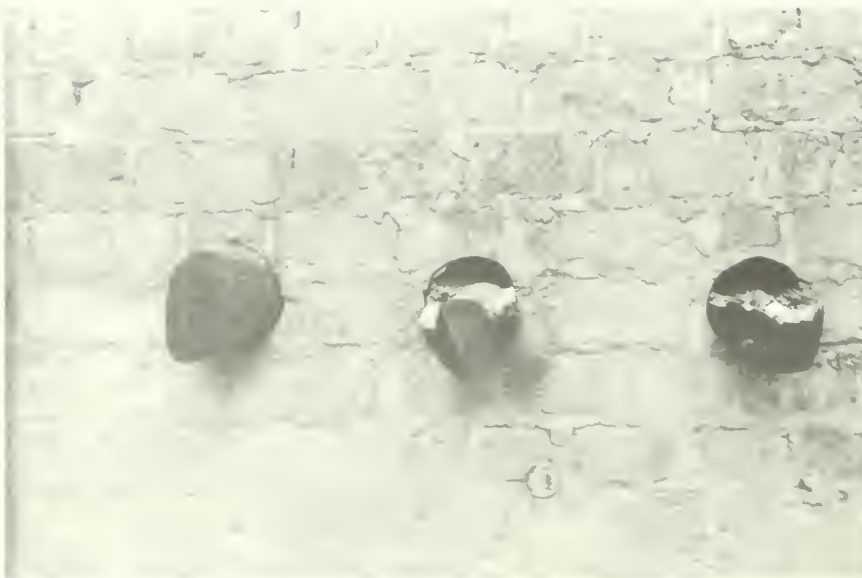


Figure 162. Severe deterioration of wood viga ends, B-7, 1984. (Photo: Copeland for NPS)



Figure 163. Severe deterioration on viga end, B-2. (Photo: Copeland for NPS)



Figure 164. Area of viga stub replacement, B-29. Note fallen and displaced stubs. (Photo: Copeland for NPS)

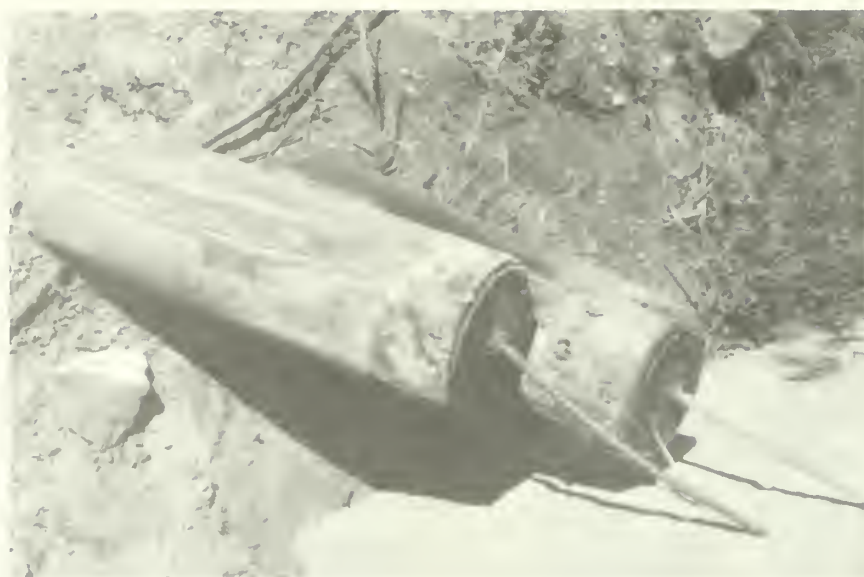


Figure 165. One method of attaching former replacement stubs using steel plate and lag screws. (Photo: Copeland for NPS)



Figure 166. Two techniques of addressing deteriorated viga ends, B-6: (1) cutting off exposed end and (2) cutting back exposed end and filling in with mud mortar. (Photo: Copeland for NPS)



Figure 167. Column base deterioration, B-17, portal. (Photo: Copeland for NPS)



Figure 168. Deteriorated lintel, B-25. (Photo: Copeland for NPS)



Figure 169. Installation of secondary EPDM flashing over canale copper flashing under way on B-13/14 portal. (Photo: Hose for NPS)



Figure 170. Structural epoxy repair, B-21, 1985. (Photo: Hose for NPS)



Figure 171. Structural epoxy repair and viga splice repair, B-13, 1985.
(Photo: Hose for NPS)

Walls

The structural integrity of the masonry walls appears to be sound overall. Isolated areas of apparent settlement exist, most notably in B-2, B-19, and B-27D. The cracking at the end of B-2's portal (figure 172) is more a result of water leakage from above and movement of the lintel than of actual settlement.³ This leakage is further evidenced by the latia staining and the amount and nature of water-induced surface efflorescence present (figure 173). Isolated areas of similar but lesser efflorescence exist on other buildings. Because of the geological phenomena that deposited much of the area's volcanic tuff, significant amounts of gas were entrapped, making the stone a highly absorbent material. Because of this porosity, efflorescence may be expected to flush out over time. The crack on the exterior face of the portal (figure 174) appears stable. The former crack in B-27D (figure 175) was replastered in 1986 and there has been no apparent movement since. Other areas of settlement existed within the parapets as a result of deteriorated column bases. Through borescopic reading in 1985, voids as deep as 24 inches were found to exist under the floor in B-19.³ These voids were the apparent result of past leakage of subfloor water pipes, threatened the integrity of the stone flooring and adjacent masonry walls. Floor and wall cracking indicated settlement of as much as 2 inches in the interior wall. Recent filling in of these voids has corrected this condition.

Along much of the north wall of the cabin complex that faces the cliff's runoff, the masonry becomes saturated during heavy rainfall. Given the type of stone and the severity of this runoff, the walls are in surprisingly good condition. This condition can be controlled as outlined elsewhere.

Mortar used within the stonework reportedly consisted of three different mixes: one for the foundations, one for the walls, and another for the parapets and their capping. Visual remains bear out the report and reveal that the buildings' pointing is the struck setting mortar. The majority are cement-based mixes, which, according to the original specifications, ranged from 1:3 to 1:5 (cement: sand) with 10 percent lime added. This mix is appropriate to the stone's approximate compressive strength of 850 pounds per square inch. A clay-based mortar was used to a lesser extent, primarily within the wall planes. Recent sampling and analysis for mortars and stuccos further support this range of constituent compositions. The results of this sampling from 14 buildings will be included in the historic structures preservation guide and data collection for the buildings. One noted characteristic of the mortar is its slight variation among buildings and even within a single structure. Repointing efforts over the years have been relatively compatible in color and texture but often have a smoother, more smeared tooling than the original. Their overall range and variety have perpetuated the buildings' subtle variations. Recent repointing efforts have often been too uniform and, in general, are incompatible with the original mortar in color, texture, and tooling and adversely affect the overall visual character (figure 176).

Today, a significant amount of mortar has lost its bond with the adjacent stone plane, allowing moisture to intrude. This condition is particularly noted on the parapets, under canales, and adjacent to wood members. The cement-based parging (stucco) at window jambs and above lintels is in generally poor condition (figures 177-179). Much of the parapet coping parging is loose; the majority of these areas have been surface coated with the roof membrane but not at the exterior face. The cap on these parapets originally sloped to the building roof. Subsequent repairs have changed much of this area so that it now directs runoff onto the wall plane, thus increasing the potential for absorption. Maintaining the integrity of the mortar joints and parging is vital to the preservation of the buildings, as is maintaining the design integrity of the parapet caps. Particularly on the entrance road wall (B-31),

many stones are loose or missing (figures 180 and 181). Although that wall is not part of this study, it deserves the same maintenance attention and sensitivity as the remainder of the buildings.

Much of the original mud stucco (or sympathetic reproductions of it) remains (figure 182). The trend toward using a stronger, cement-based, painted plaster under portals, which began in the 1940s for maintenance concerns, continues. This new material gives the walls a much harder, cleaner appearance than the original mud mix. Many of these painted wall bases under portals have a much higher painted plane than earlier schemes and today have a scalloped edge design. Although an exterior rendering may provide protection and a certain amount of sealing to the stonework, it should be remembered that the original coarse stucco was applied to provide a visual softening and artificial aging to the structures' aesthetic. Restucco efforts should retain this design intent rather than be a mere stucco wash that totally changes the essential character of the stonework (figures 183 and 184).

At some point, B-26 was given a Hypalon coating over its exterior walls. This material, contrary to its intended purpose, trapped embedded moisture and increased surface spalling. Under the Package 224 work, the Hypalon was peeled away and a stucco coating installed.



Figure 172. Wall crack in B-2 portal parapet.
(Photo: Copeland for NPS)



Figure 173. Surface efflorescence from falling damp on B-2 portal parapet. Note similar condition of rising damp on adjacent wall.
(Photo: Copeland for NPS)



Figure 174. A wall crack on the B-2 portal parapet. (Photo: Copeland for NPS)



Figure 175. A plaster crack in B-27D before replastering. (Photo: Copeland for NPS)



Figure 176. Detail of B-10 showing recent repointing efforts. Note the cap installed on the attic vent. (Photo: Copeland for NPS)



Figure 177. Detail of typical parging separation at a window jamb. (Photo: Copeland for NPS)

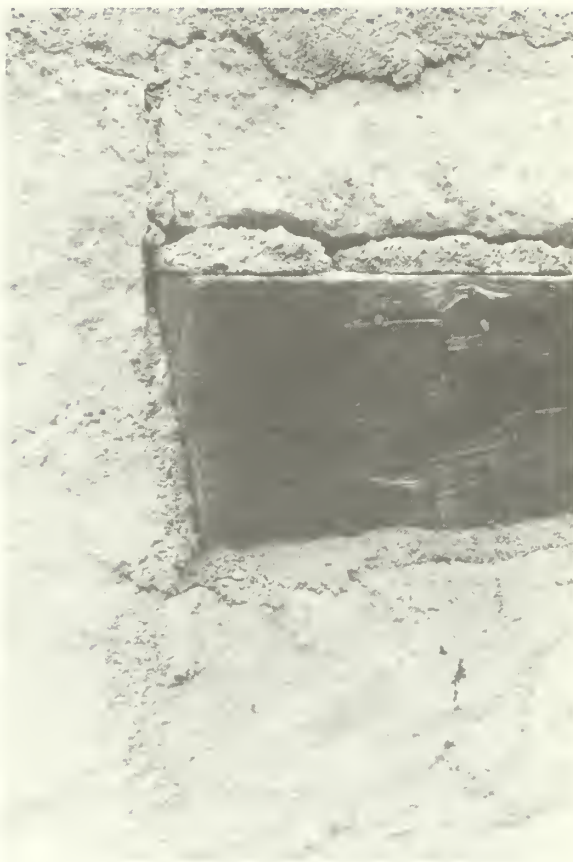


Figure 178. Detail of typical parging separation at a lintel. (Photo: Copeland for NPS)



Figure 179. Detail of typical parging separation at a lintel. Note the mortar separation at the masonry overhead. (Photo: Copeland for NPS)



Figure 180. Detail of the entrance road wall (B-31), showing loose, separated stone. (Photo: Copeland for NPS)



Figure 181. Detail of the entrance road wall (B-31), showing missing stones. (Photo: Copeland for NPS)



Figure 182. Detail of the original mud stucco, B-6. (Photo: Copeland for NPS)



Figure 183. The rear of B-9, showing the original character of the partially stuccoed masonry. (Photo: Copeland for NPS)



Figure 184. The rear of B-2, showing the change in masonry character as a result of recent restucco efforts. (Photo: Copeland for NPS)

Windows and Doors

The vast majority of the existing casement window sash and screens (including hardware) are original and in relatively good condition. All the existing doors are suspected to be original and are in similar condition. Door thresholds are sound but obviously worn. Most of the condition defects relate to deferred maintenance – missing or cracked putty, excessive paint buildup or alligatoring or both, difficulty in operation, rotten muntins, and so on. A general 1988 window survey indicates approximately 20 sash and screens with rotten components and only a few deteriorated sills. The majority of these rotted areas and their frames require minor repair or repainting or both. Except for recent window repairs, most of the windows and doors have defective weather stripping or none at all. All require caulking at the frame perimeter. The original colors were a rich, multicolored scheme of greens (Munsell 2.5G/5/8), reds (7.5R/4/8 and 2.5YR 7/8), and blues (10B5/8), colors in the tradition of southwestern architecture. In the early 1960s, the original color scheme was discontinued and a more uniform scheme came into use. This change to a rather uniform brown resulted in a significant change to the overall building complex presentation. Because of the quantity of doors and windows present and the expressed desire to retain existing colors in this project work, only random paint sampling was undertaken. Because these historical data remain in situ, exact locations for use of the original colors can be easily established if and when desired. In any work on windows or doors where paint is stripped to bare wood, paint samples should be taken, properly identified, accessioned, and stored in the park collection.

The original multipane window sashes in the residential area (B-7, B-8, B-10, B-11, and B-32) were replaced with double-glazed, single-light casement windows in 1981. This unfortunate removal of historic fabric resulted in a major visual change to the buildings' character. In 1981, the windows in B-30 were replaced with sloped glazing units, presumably to lessen solar glare.

In an effort to improve thermal efficiency, insulating panels were installed on B-2, B-9, and B-15/16 in FY 1984. This work consisted of installing 16 fixed, double-pane windows at original single-light locations and piggyback wood-frame glass panels on 78 casement sashes. These sashes were positioned in response to the existence (or lack) of window screens to avoid altering the exterior reflective character of the original windows. One criterion in this design was to install a system that would not require seasonal removal, storage, and reinstallation. Concurrent with this work was the installation of door and window weather stripping. Where these new frames were installed on the interior, the additional thickness resulted in the need to move the locking barrel bolts and latches. Minor modifications to any future new stiles will lessen the required modification to this historic hardware. Similar work was initially a component of the regional day labor work, but for several reasons it was put on hold. One reason is that on approximately 20 percent of the previous installations, condensation forms between the two panes because of the lack of sealed insulation glass and the difficulty in sealing out all existing moisture.

A second and more significant reason has to do with personal safety considerations. When used solely as overnight cabins, B-19, B-20, B-23, B-24, B-27, B-28, and B-29 had no significant problems. However, with their conversion to full-time or seasonal quarters and discontinuation of B-21 as a central water heater came requirements for individual furnaces, hot-water heaters, and stoves. Once air infiltration is sealed, especially in such small quarters, air exchange is insufficient to supply oxygen for these gas appliances to function properly. Subsequent readings have indicated excessive carbon monoxide levels in several of the units. Because of this situation, weather stripping and energy conservation work was halted so that this condition could be resolved.

Floors

The buildings' floors are andesite flagstone, vinyl and ceramic tile, concrete, and wood. Small areas of carpet have been installed in residences. Except for B-19, all interior flagstone flooring is in sound condition; exterior flagstone walks are discussed elsewhere. Much of the original oil and varnish finish is worn, giving the stone a mottled appearance, but this condition is easily reversed without creating excessive need for maintenance.

Through rehabilitation over the years, most of the original vinyl floor tile has been replaced, in many cases with ceramic tile. Bathroom floor tile was replaced in kind in the cabin units under the 1984 plumbing contract. Other areas are in varying condition of wear. In the residential areas, the ceramic tile is in good condition, but in the public areas, cracked, loose, or missing tile needs repair. Wood floors are in good condition but require periodic treatment. The concrete floors are sound. Like wood floors, painted concrete floors require periodic upkeep.

ENDNOTES

1. "Replace Canales and Miscellaneous Roof Repairs," June 1986 (drawing 315/80,030) and "Rehabilitate Vigas, Columns and Miscellaneous Wood Members," August 1986, both prepared by Randall Copeland, DSC.
2. "Preservation Plan – Historic Building Complex, Bandelier National Monument," May 1985 by Conservation Services, Kinnelon, New Jersey.
3. Trip report, July 29 through August 2, 1985, memorandum H30 (DSC-TSE).

TREATMENT RECOMMENDATIONS

THE SITE

General

The task directive for this study did not include research on specific landscape features such as terrace walls, lighting, and the like. Thus, those features are dealt with only in a general manner. Here specific recommendations are made for vegetation and drainage issues only. These recommendations are to be used as guidelines for preparing and implementing development plans. In the future, additional research must be done before treatment recommendations are made for other landscape elements such as parking configuration, paving materials, circulation, signage, and lighting.

The analysis of various areas as detailed in the preceding pages is one criterion to be used in establishing recommendations for acceptable and unacceptable change. The criteria used for making recommendations are prioritized as follows:

1. Identify and respect original landscape elements, including landscape structures, drainage facilities, and vegetation, based on the mandates of preservation law. This criterion includes removing nonhistoric components that compromise the historic scene, and enhancing or reestablishing historic features.
2. Inventory the need for changing specific landscape features for reasons of public safety, facility protection, and eradication of exotics.

Circulation

Circulation consists of both vehicular and pedestrian routes. The development concept plan currently under way, and other planning documents in the future, should study the history and significance of these routes before any changes are made to the entry road, parking facilities, curbing materials, paving materials, and pedestrian paths.

Landscape Structures and Related Features

Treatment recommendations in this section are general. Future work that affects these structures and features as well as any additions, should be preceded by an inventory of historic and nonhistoric features, cultural landscape context, and preservation alternatives.

Landscape structures and related features have undergone some minor modification through the years. As the remaining historic materials and the replacement materials deteriorate, a greater effort must be made to choose replacement materials that are more compatible with the original materials in color, size, scale, material, and character.

Some minor nonhistoric modifications to the landscape features should be changed soon. Some examples include the television antenna, which should be removed, and light poles, which should be lowered from the visitors' sight. The bright green walk lights should be painted the tan color of the other utilities. The bright yellow fire hydrants should be toned down to a more compatible color such as the tan color of the other utilities.

Vegetation

The long-range goal for vegetative management in the historic district is to restore, to the greatest extent possible, the character of the historic landscape (see "Vegetation" in the "Physical History" section). Recommendations for vegetation improvement include plant removal, planting, and pruning or trimming.

Plant removal should include stump removal, either mechanically or through controlled chemical decay, and should be coordinated with the Southwest Regional Office natural resource specialist. Plant trimming should be done under the supervision of a landscape architect who has full knowledge of the desired results. Planting should also be supervised by a landscape architect and based on an approved planting plan.

A complete list of plants that are found on the site is in appendix A. A preliminary list of replacement plant materials can be found in appendix C. The list should be reviewed for historical accuracy, and specific applications for replacements should be determined in the future.

Plant treatment recommendations shown on the vegetation improvement plan for the headquarters area (figure 185) and the site improvement plan for outlying areas (figure 186) are set up in a manner so that the park may start immediate implementation, following the approval of Assessment of Effect forms. These recommendations are based on resource protection, public safety, eradication of exotics, and restoration of historic character. Additional research and development plans are needed to provide the final design and set standards for the level and manner in which the vegetation should be maintained. Also, a cyclic maintenance plan is needed for the vegetation.

Visitor Center. The plant rehabilitation intent at the visitor center is primarily to remove recent plantings and to expose the building facade by trimming trees and removing shrubs. Also, the intent includes altering the current management practice of fertilizing, mowing, and watering the lawn areas around the visitor center to allow the lawns to return to a more natural, semiarid state. The following rehabilitation steps should be taken around the visitor center:

- Remove shrubs at the northeast side.

- Remove all box elder at the entrance.

- Remove the fruit tree at the entrance.

- Trim up the 3-inch juniper, the 8-inch piñon pine, and the 13-inch juniper at the entrance.

- Remove all box elder at the southeast side.

CABIN COURTYARD

PH1 - ALLOW
GRASS TO GROW

PH1 - REMOVE
2' DE 4 DE 7 DE

PH1 - TRIM
7 DE

PH1 - REMOVE
7 DE

PH2 - TRIM
5' JU 10' JU

PH2 - ADD
JU TO SCREEN

PH2 - REMOVE
5' JU; ALL DE

PH1 - REMOVE
4 10' DE

PH1 - REMOVE SHRUBS
ALONG WALL

PH1 - REMOVE
5' DE

PH3 - REMOVE
5' CW 5' DE

PH1 - REMOVE
OVERHANG

PH1 - REMOVE
JU

PH1 - REMOVE
ALL DE
AND STUMPS

VISITOR CENTER

PH2 - REMOVE
6' DE, 8' DE

PH2 - REMOVE
1 OF 4 CW



30' 15' 0' 30' 40'

SCALE IN FEET

MISCELLANEOUS COURTYARDS

PH1 - ADD DAY LILY
GROUND COVER

PH2 - REMOVE
15' DE, 10' DE

PH1 - TRIM UP 15' CW
15' DE, 24' DE

PH1 - REMOVE
24' DE, 26' DE

PH1 - REMOVE
ALL NM OLIVE

PH1 - REMOVE
5' JU, 13' JU

PH1 - REMOVE
5' DE

PH1 - REMOVE
ALL NM OLIVE

PH1 - REMOVE
5' JU, 13' JU

PH1 - REMOVE
5' DE

PH1 - REMOVE
5' DE

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LEGEND - VEGETATION

- AL ALDER
- BE BOX ELDER
- BR BIRCH
- CW COTTONWOOD
- DF DOUGLAS FIR
- FT FRUIT TREE
- HB HAZELBERRY
- JU JUNIPER
- LC LOCUST
- OK OAK
- PI PINION PINE
- PD PONDEROSA
- SH SHRUB
- GR GRASS

VEGETATION IMPROVEMENT PLAN

HEADQUARTER'S AREA

BANDELLER NATIONAL MONUMENT
United States Department of the Interior / National Park Service

315-25005-DSC-SEPT 91

Figure 185. Vegetation improvement plan map.

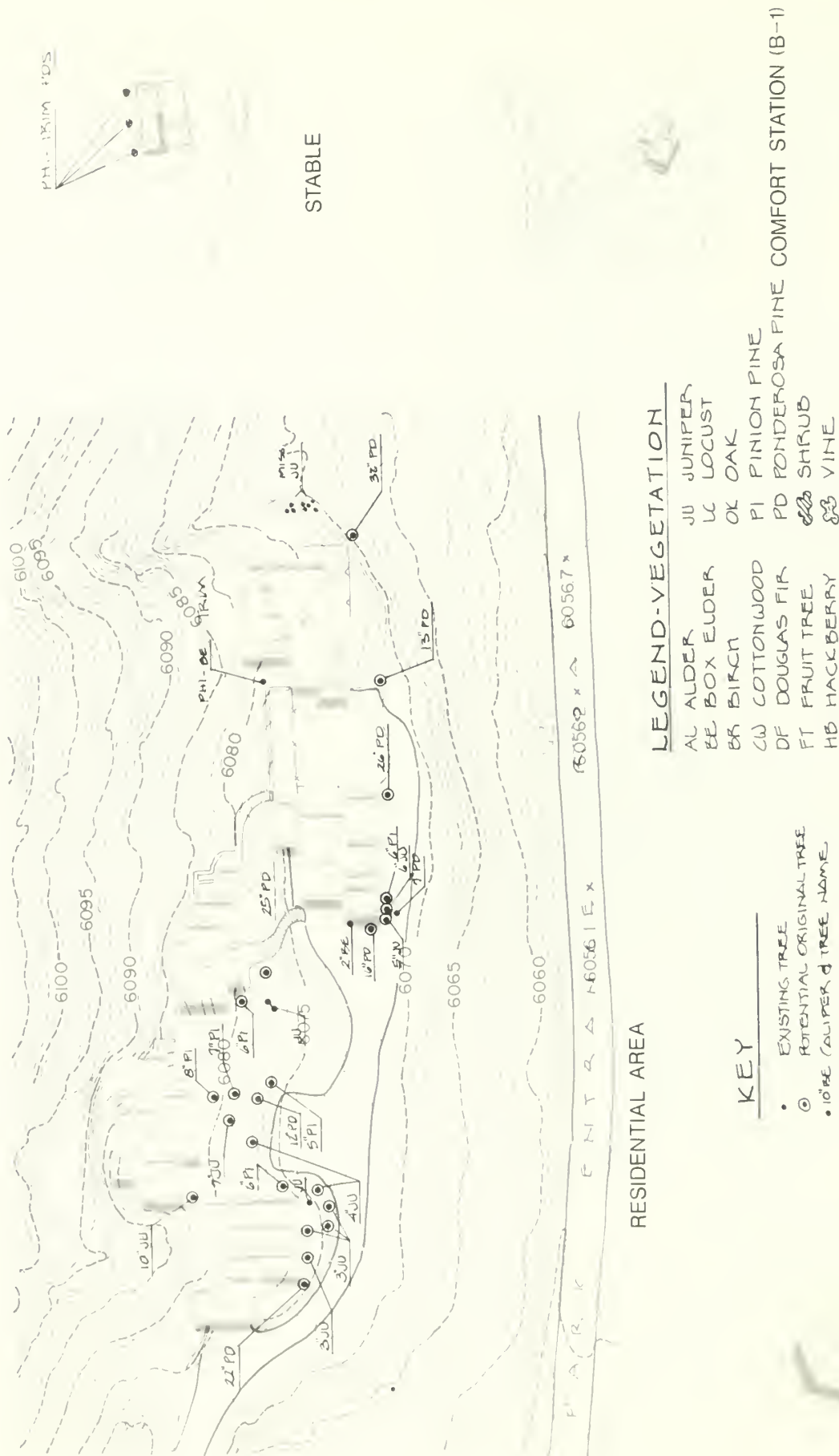


Figure 186. Site improvement plan map.

SITE IMPROVEMENT PLAN OUTLYING AREAS

BANDELLER NATIONAL MONUMENT
United States Department of the Interior | National Park Service

Remove the 8-inch box elder against the courtyard wall and the 6-inch and 8-inch box elder on the southwest side.

Remove the apple tree south of the comfort station.

Remove the 3-inch box elder and the 3-inch cottonwood from the northwest side of the courtyard.

Remove all box elder, including stumps, southwest of the visitor center and west of the courtyard.

Cabin Courtyard. Plant rehabilitation at the cabin courtyard includes removing rank growth through the walk system, trimming up trees with low branches (raising the crowns of trees), and trimming to open vistas to the cliffs. Trees that adversely affect the buildings should be removed or trimmed.

Remove the 2-inch, the 4-inch, and the 7-inch box elders near B-28.

Trim the 7-inch box elder south of B-28.

Remove the 7-inch box elder north of B-27.

Allow native grass to grow.

Remove nonhistoric shrubs.

Remove four 10-inch Douglas firs.

Prune the fruit tree north of B-24.

Remove three of the four hackberry trees; keep the largest hackberry, adjacent to B-24.

Trim the 8-inch juniper (original tree) southwest of B-27 (figures 187 and 188).

Trim the 10-inch juniper (original tree) north of B-27.

Add 14 five-foot junipers west of B-24 and B-27.

Remove the 21-inch box elder (original tree) only as a last resort; it is cracking the small wall (figures 191 and 192).

Remove the 9-inch box elder south of B-20.

Remove the 3-inch hackberry south of B-21.

Miscellaneous Courtyards. Plant rehabilitation for these courtyards includes trimming up low branches of trees to open vistas to the cliffs. The fruit trees should be pruned with assistance from the Division of Natural Resource Management.



Figure 187. Juniper planted in the cabin courtyard, 1940.



Figure 188. The same juniper in the cabin courtyard, 1988.



Figure 189. Ponderosa pine in the cabin courtyard shortly after transplanting, 1940.



Figure 190. The same pine in the cabin courtyard, 1988.



Figure 191. A forked box elder tree in a planter in the cabin courtyard, 1940.



Figure 192. The same box elder, 1988. The forked tree now has a caliper of 21 inches and is threatening to crack the small planter.

Trim up the 13-inch cottonwood, the 15-inch box elder, and the 24-inch box elder in the dining courtyard.

Prune the fruit trees.

Parking Island. The planting rehabilitation intent for the parking island is to remove rank growth – primarily desert olive and box elder – and remove trees growing too close together (figures 193 and 194).

Remove the two 4-inch and the two 6-inch box elders from the northeast side of the island.

Remove the desert olive.

Creekside. Future plans should consider plant materials to discourage pedestrian traffic over erodible soils.

Thin the box elder southeast of the comfort station.

Maintenance Area. Plant rehabilitation for this area consists of thinning out shrub undergrowth along B-3, and possible removal of box elders that are pressing against the wall.

Trim the 5-inch oak south of the south wall.

Remove underbrush and trim up trees from the north corner of B-3 to the south corner of the building.

Monitor the cracked wall near B-14 for continued deterioration. If movement continues, remove 18-inch and 10-inch box elders.

Residential Area. Plant rehabilitation is limited to pruning or trimming in this area.

Trim up the box elder north of B-32.

Stable and Other Outbuildings. Plant rehabilitation for these areas is very limited. Most are very naturalized and need little change.

Trim up the trees adjacent to the stable north wall to open the structure to light and air.

Drainage

Recommendations to improve drainage and alleviate deterioration of building walls focus primarily on the north (uphill) side of the compound. These recommendations include improving the major diversion ditches, regrading problem areas, containing canale and roof runoff near the diversion ditch, possibly installing foundation drains, and improving minor (6-inch) subsurface drain lines (figure 195). These recommendations are based on a cursory study only. Before any final design recommendations are



Figure 193. The wall north of the parking area, 1988. The rank growth of desert olive should be removed to expose the wall.



Figure 194. The parking area north wall, 1988. The box elder tree should be pruned up to raise the canopy.

made, a qualified geotechnical engineer should make tests, recommend design solutions, and provide cost estimates.

The most serious drainage problem is the wet and deteriorating upslope walls of the headquarters compound. This problem is caused by water being concentrated at specific areas and seeping against the foundation walls instead of being allowed to percolate down through the talus material. Water is apparently ponding and saturating the subsoil sufficiently to wet and cause deterioration of the back walls. The solution to this condition during original construction would have been to install foundation drains like those behind B-12. None of the other building plans show this type of drainage.

The following recommendation is based on a general idea of probable cause (not technically specific) and is intended for all the buried upslope walls. Further studies could target the improvement to specific areas where drainage problems have become apparent.

It is recommended that the flow of water to these problem areas be diverted safely away from the buildings. Foundation drains of 6-inch perforated plastic pipe could be installed at the bottom of all upslope footings. Backfill around the pipe could be a coarse gravel. Buried upslope walls could be studied further for waterproofing options.

The diversion ditch is needed primarily for major downpours (figure 196). Regrading to a consistent slope and waterproofing with a Gunit-type surface would enable this ditch not only to handle major downpours and minor surface water but also to carry roof drainage safely away from the buildings (figure 195). With increased flow in the diversion ditch, a small maintainable setting basin would be needed downstream above the catch basin. Talus slope creep will always be a problem to grounds maintenance. Concrete coating or "Guniting" the ditch will at least direct the flow of loose particles and make removing them easier. A more detailed study by a geotechnical engineer could show the need for walls, gabion treatments, forced revegetation, and irrigation. Because the upslope of this headquarters area is a maze of buried utility lines, any excavation will undoubtedly be done by hand.

Minor drainage lines initially designed were never totally completed, and where canale-directed roof water is a problem, the drainage structures and lines designed during the CCC era might be installed. Upgrading the present lines to larger size would improve drainage, but the destruction to historic fabric makes that option questionable.

In several areas such as B-6, B-2, and B-23, regrading will take care of wet wall problems. Surface drainage seems to function effectively with only minor sedimentation problems.

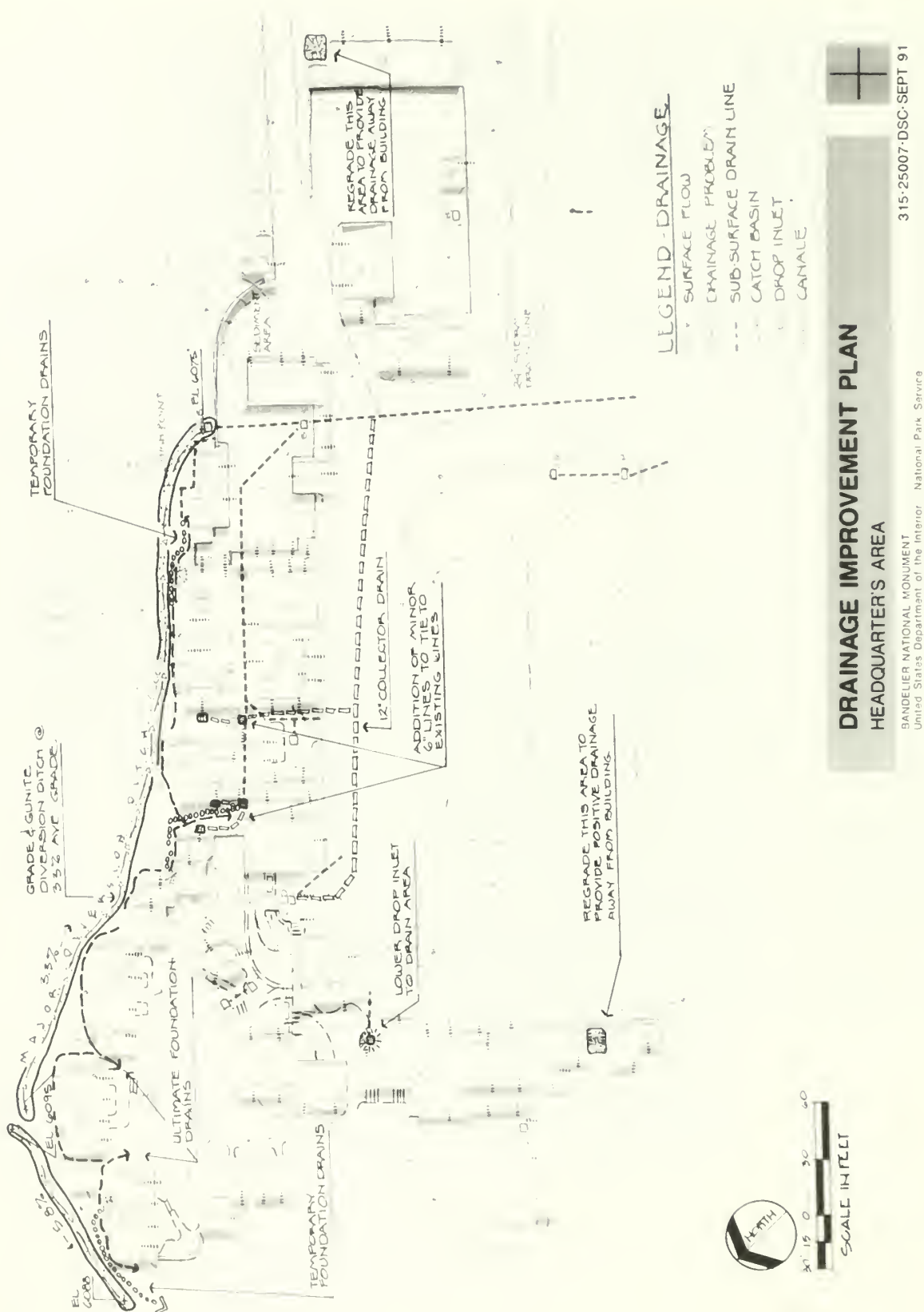


Figure 195. Drainage improvement plan map.



Figure 196. View of 1940 diversion ditch. Porous soil allows very little water to follow the ditch.

THE BUILDINGS

Stabilization and preservation (as defined in NPS-28) are the primary aims of the rehabilitation work that has been undertaken to date and the further work that has been recommended. Arresting material deterioration and maintaining the structures' ability to withstand weather are the project goals. Some features of the type of construction used at Bandelier have inherent defects. Although exposed, projecting wood members are stylistically correct, have a long traditional base, and are primary character-defining features, they also invite decay and require continual maintenance. Within this context at Bandelier, exposed vigas and canales can be assessed more as character-defining features than as historic fabric. Because of the inherent characteristics of wood in a natural, exposed environment, these members have required replacement approximately every 30 to 40 years. Proper maintenance can help extend this life span. Using project completion reports, as-built drawings, and project histories will greatly assist this effort.

Although no recommendations are made to restore the buildings, it is recommended that – through cyclic maintenance and future rehabilitation – elements of the buildings' past character be reintroduced. Doing so consists of the previously mentioned vegetation control, reintroducing the varied door and window color scheme, and maintaining a more weathered stucco appearance. Future interior rehabilitation for adaptive use should seek to retain the buildings' essential historic character and ambience.

The goal of preservation projects should be to use maintenance to retain original fabric and halt deterioration, to use original materials and methods whenever possible, and to restore missing or deteriorated features where needed to understand the structure or ensure its function. These actions should be undertaken with respect for the original fabric, the district, the individual structure's character and significant characteristics, and recognition of maintenance concerns. Work performed and recommended under Package 224 will maintain the existing district and individual structures' character.

Roofs

For the time being, the roofs are in sound condition but require periodic repair to correct ongoing, and undoubtedly future, leaks. With an equitable balance between proper maintenance and benign neglect, they can be expected to last for some time. Proper maintenance is defined as keeping all canales, scuppers, gutters, and drainage outlets clear of obstructive debris and excessive ice buildup. It also means keeping the roofs clear of excessive overhanging vegetation to limit the number of limbs falling onto the roofs. Cyclic and proper tree pruning are significant components of the roofs' longevity. Much of this cyclic maintenance can be done from ladders to avoid excessive use of the roof surface itself. Benign neglect is defined as staying off the roofs as much as possible except for cyclic inspection and required maintenance. Laying tools and equipment on roofs should be avoided as much as possible. Any temporary repairs should be undertaken through manufacturer warranty or with manufacturer-approved materials and methods.

Addressing the aesthetic incompatibility and leakage history of the roof membranes (and its eventual need for replacement) was a major design consideration during the design of the package-related canale work. The majority of the canale replacement project was oriented toward the April 16, 1985, consensus acceptance of a proposal to pursue roof replacement through a cyclic program. The flashing

technique employed will allow for new roofing material to form an effective seal at canales without disturbing the metal flashing.

As roof-attached utilities lines are replaced, it is recommended that no effort be made to remove embedded conduit, thereby avoiding the need for additional foam and membrane patching. Any new utility routing should avoid mechanical connections to the roof membrane or wood members.

Over time, as roofs need replacement, it is recommended that single-ply membranes or more traditional roofing systems be pursued. Various ballasting systems should be explored with particular emphasis on loading constraints, flashing requirements, and visual impacts. Recent developments in modified bituminous materials have significantly improved the life cycle performance of built-up systems. One guide to use in the assessment of alternative roofing systems is the degree to which the materials are shop manufactured versus dependent solely on successful quality control in the field. During any replacement work, it is recommended that all the existing roofing system be removed to allow sheathing inspection. In the new work, rigid closed-cell foam insulation board should be installed rather than spray forms containing fluorocarbons. It is also recommended that, during future roof replacement, the top parapet course be removed to allow for the installation of copper through-wall counterflashing and then reset to its original configuration. New coping material should slope to the roof rather than to the wall face.

It is recommended that a small interior access scuttle be provided in each building for periodic inspection and verification of roof framing. Scuttles can be located in closets or other unobtrusive areas to mitigate their visual impact.

Because of their location and the required roof repair, no recommendation is made to reconstruct the missing parapets on B-1 and B-25.

Estimated cost to replace all urethane roofs, including new insulation and metal counterflashing, is \$300,000.

Vigas, Canales, Columns, and Lintels

Work undertaken to date has put the majority of the buildings' wood members (with the exception of B-25) in sound condition and within park capabilities of cyclic maintenance. B-25 requires a similar inventory and treatment. Again, with proper maintenance, these members will remain sound for years to come. This proper maintenance consists of keeping canales and their masonry openings free of vegetation and ice buildup; keeping exposed wood (particularly column bases) free of snow and organic debris; maintaining the protective stain coating; and maintaining the integrity of the seal at adjoining masonry surfaces. Those members not replaced or treated should be inspected periodically. Where replacement is required, methods similar to those undertaken to date should be pursued.

Because of their location on rear unseen facades and to lessen future maintenance expenditure, no recommendation is made to reintroduce exposed viga ends on B-1, B-6, and B-25. It is recommended that the visitor center sign be removed from the facade and a smaller sign installed on the lawn. Then the missing viga stubs could be reinstalled over the entry portal.

Walls

A program of continued repointing is required to ensure the proper role of the masonry mortar joints. This work should also include maintaining the integrity of parging at window and door jambs and at the parapet copings.

Because the buildings were constructed over a number of years and each has its own unique, although similar, design, repointing efforts should respect those subtle variations. The results of analysis work undertaken and to be included in the historical structures preservation guide will assist in setting acceptable parameters on the range of pointing mix and texture. Similarly, any stucco work should be guided by historic precedents. Stucco on the buildings is primarily an aesthetic concern, and it provides only minimal protection to the stonework. Wholesale restuccoing has no historic precedent, noticeably changes the buildings' appearance, and is not recommended. Any effective results toward sealing the stonework below would prove visually incompatible.

A great deal of discussion has centered on the "functional" role of the original stucco. It may have helped to seal the mortar joints, but its success is questionable. Because of the stucco's formula, the material undoubtedly allowed air and moisture to move in and out. Even if it were acting as a seal and given the lack of a full stucco coating to the exteriors, any moisture migration through the porous stonework would merely wick around any seal or barrier and continue. Similar action would have occurred for any thermal performance. The whole relationship between mortar and stucco and their original and future replacement compositions is a complex issue that requires careful thought before any parkwide application is made.

Windows and Doors

Like most other building components in the CCC complex, the windows and doors require a system of ongoing cyclic maintenance. Although there are many of them, following a system of inspection, maintenance, and record keeping will greatly assist this effort and lessen the perception that it is overwhelming.

It is recommended that, through cyclic maintenance, missing screens be replaced, wood members that have deteriorated be repaired or replaced in kind, and nonhistoric hardware be replaced with more compatible hardware. If undertaken through contract, this work is estimated at \$15,000 to \$20,000. Maintaining sound caulking and putty will always be a maintenance concern. To reintroduce much of the complex's former character, it is recommended that the return to a more varied exterior color scheme be considered. This change can easily be reintroduced gradually, in the normal painting cycle.

No effort is recommended to reproduce the original multipane sash in the residential area. However, it is strongly emphasized that no further efforts of wholesale removal of historic fabric should be undertaken without project compliance with section 106 of the National Historic Preservation Act.

On the insulating windows installed to date under this package, a survey should be taken to determine on which windows condensate forms, when, and to what degree.

Alternative treatments should be explored, including drilling air weep holes (from one or both sides) and installing a different seal material to ascertain corrective measures. Until the internal combustion

air problem is resolved, no further weather stripping is recommended. In view of the current use of the buildings, insulating windows may not be required on B-1, B-26, and B-30 (no winter use) and B-4, B-5, B-6, B-14, B-21, B-22, and B-25 (unheated, maintenance-oriented structures).

Floors

The continued upkeep of flagstone floors is a strongly expressed maintenance concern. The preferred recommendation is to restore or retain the original oil-and-varnish treatment. A valid alternative is the use of colored waxes, which is a reversible treatment that can be installed adjacent to the former treatment; the comparative wear and maintenance requirements can be evaluated.

In any future replacement of tile flooring, similar material, color, and size should be used. Acceptable replacements are readily available. Wood floors should be power sanded only when absolutely necessary. The application of carpet over concrete floors, where required, should be done with the use of carpet-to-pad adhesives or reversible adhesives only.

Utilities

The only utility-related recommendation concerns resolution of the cabins' combustion air problem. First and foremost, a survey should be conducted on all buildings with all gas appliances (range, water heater, and furnace) in operation. Windows and doors should be temporarily sealed to simulate the presence of weather stripping. Readings of the carbon monoxide level will indicate the level of treatment needed. On buildings with low readings, the solution may be merely to substitute an electric appliance. High readings may indicate the need to acquire all-electric appliances. This substitution of electric for gas appliances is preferred over alternative fabric modification treatments, which would consist of providing direct exterior double-wall vents for the furnaces or water heaters or both.

Asbestos

Following the findings of Los Alamos Laboratory's survey, appropriate action can be developed. Pending these findings and any remedial treatment, caution should be used around the material to avoid any further disturbance. The material may be intact and pose no health hazard. At the least, the material should be visibly labeled and a cyclic inspection program implemented.

ACCESSIBILITY AND ADAPTIVE USE

In the immediate future, two issues that could have major effects on the physical fabric and architectural integrity of Bandelier's CCC buildings are providing handicapped accessibility and incorporating adaptive use. This section sets forth general guidelines and philosophy to govern decisions affecting the physical fabric, character, and integrity of this national historic landmark district. The historic buildings and their immediate landscapes are a national historic landmark district that must be preserved. These guidelines concern NPS as well as concessioner-initiated activities.

ACCESSIBILITY

Like other federal agencies, the NPS is mandated to comply with the Architectural Barriers Act of 1968 and section 504 of the Rehabilitation Act of 1973. In brief, the Architectural Barriers Act of 1968 requires buildings and facilities designed, constructed, altered, or leased with federal funds after 1969 to be accessible to and usable by persons with physical disabilities. Section 504 of the 1973 act prohibits discrimination on the basis of physical or mental handicap in most federally assisted programs or activities. NPS-28 states, "in the case of historic structures and sites, accessibility generally means direct access to all aspects of programs and services." Compliance with this dictate is through the use of the *Uniform Federal Accessibility Standards*, 41 CFR 101-19.6.

To guide parks and monuments in meeting these mandates and departmental policies, the Southwest Regional Office has prepared a handicapped access plan (August 1986). As part of that plan, each park will prepare a self-evaluation for handicapped accessibility. Bandelier's draft self-evaluation, prepared in 1987, discusses visitors' and park employees' access to buildings, services, and interpretive programs. Problem areas are cited, and alternative and proposed solutions given. After review comments are incorporated, the draft document will be distributed for public review. In addition, the handicapped access plan stresses that the regional special populations coordinator review and comment on plans, designs, and specifications that may influence, directly or indirectly, handicapped accessibility. This system earmarks the special populations coordinator as a key team member to be involved at the earliest possible stage.

Certain physical characteristics of Bandelier's architecture – elements common to the pueblo revival style – warrant description here because of their direct connection with handicapped accessibility. The most notable element of the style that creates an obstacle to access is the frequent change in floor level. This change occurs from room to room and from exterior to interior. Small changes of two or three steps are significant features of that architectural style. For the most part, the steps are functionally necessary and architecturally significant. The designers specifically chose to terrace the buildings gently up the hillside. In a few instances, the architects included the level changes as aesthetic rather than functional choices. In either case, however, the spatial experience of progressing through the different levels of rooms and patios is one aspect of the district's architectural significance included in the national historic landmark nomination. The subdued vertical motion is a significant part of the perception and architectural beauty of the buildings.

Other characteristics of pueblo revival buildings are the types of doors and doorways at Bandelier. The multilight double doors into the visitor center and administrative offices, for example, are an integral

part of the buildings' front elevations. They create a specific visual image and a strong physical impression when people enter. The solid wood doors at the entrances to the rest rooms are also an integral part of the architectural ambience of Bandelier. These prime architectural elements are among the prime obstacles to handicapped accessibility.

Bandelier's self-evaluation for handicapped accessibility addresses specific problems in a number of buildings. Among these are

B-2

(the entrance ramp at the visitor center, the steps from the lobby into the museum, the ramp into the museum, and the entrance into the auditorium from the lobby and to the Ruins Trail)

B-3 through B-6 (the maintenance yard)

(numerous access barriers)

B-9

(the entrance to the rest rooms)

B-15/16

(the entrance to administration building, upper-level access in the administration building, rest room access in the administration building, and the rear exit from the administration building)

B-17

(entrances to the snack bar, gift shop, and patios)

B-30

(lack of access to the fire lookout)

Other concerns, such as the height of wall telephones, counters, plumbing fixtures, mirrors, and door closures, and marked handicapped parking spaces, are included in the document. The self-evaluation also proposes solutions. For the most part, the proposed solutions provide an acceptable level of accessibility while respecting the buildings' integrity.

Eventually solutions will require implementation. The designer, then, becomes the responsible party. In considering Bandelier's accessibility problems, the designer of the physical solutions must acknowledge the paradoxes in federal laws and regulations and agency guidelines. Preservation law and accessibility law can operate at counterpurposes. Preservation law mandates that this agency preserve the stone steps of the landmark buildings and landscape, while accessibility law mandates that the agency provide access – which could mean demolition or significant alteration of historic fabric. The

designer of the physical solutions must seek a common ground to attain the dual goals of preservation and access.

To reach the common ground, the designer should do as follows:

Analyze the function and determine if it is absolutely necessary at that location.

Analyze the physical location, including traffic patterns, materials, slopes, rise, and the like.

Analyze the historic fabric. What are the elements of that historic fabric? Consider not only the stone steps, for example, but also their color, sheen, texture, form, and architectural context.

Analyze alternative levels and methods of accessibility.

Draw up all the alternatives for consideration. Alternatives may consist of programmatic as well as fabric intervention alternatives. Renderings assist in the visualizing process.

Approach the historic fabric with a conscience. Realize that every change to these landmark buildings, no matter how slight, alters their architectural significance.

Construct something irreversible only as a last resort.

Often programmatic alternatives can alleviate the level of required treatment, especially in the case of addressing employee accessibility (versus visitor accessibility). For example, modifying existing Mission 66 housing for accessibility may prove an acceptable alternative to altering a CCC structure significantly. Similarly, certain historic housing units would require fewer modifications than others. Moving people or functions to an acceptable facility rather than modifying historic fabric is also a possible approach.

By keeping within the guidelines of NPS-28 and those proposed in *Accommodation of Disabled Visitors at Historic Sites in the National Park System* (1983) as well as the above tenets, the designer should be able to meet the challenges imposed by handicapped accessibility. Any change to landmark buildings is, of course, subject to compliance with section 106 of the National Historic Preservation Act.

ADAPTIVE USE

Adaptive use is the process of adapting a structure or site to provide a new use other than that for which it was originally designed. Often, adaptive use requires no architectural modifications at all. In some instances, adaptive use can necessitate major changes to both interiors and exteriors of buildings, such as construction of additions, alterations to fenestration, and changes in room configuration. In other instances, changes can be confined to interiors. In a similar manner, landscape features can be modified in adaptive use. Examples are regrading for drainage or accessibility, and introducing lighting, mailboxes, and so on. Site and building modifications brought about by adaptive use, however, may affect the appearance and architectural integrity of the district. Adaptive use also allows a building with

an obsolete function to evolve into one with a more vital function. Benefits for continued use of a building may be enormous.

The landmark status of Bandelier's CCC district brings with it heavy responsibility to preserve the buildings' historic fabric as well as the district's ambience. Buildings solely on the National Register can be treated with a little more latitude in the area of physical changes to accommodate adaptive use. The national historic landmark district at Bandelier – a national treasure – requires considerably more thought to accommodate adaptive use and preserve the historic fabric and integrity.

A few general guidelines establishing a preservation philosophy are included here. Without exception, the buildings' exteriors must be preserved. Interiors, however, can accommodate minor changes. The monument staff and the designer should consider the following:

Is this interior space the best location for this new function? Could a different space accommodate the same use although it might lack the same level of convenience?

What are the historic use and the historic room configuration? Do any interior changes date to more recent years? Have these later changes acquired their own significance?

What is historic fabric? What are the qualities that make up the room's ambience? Consider space, materials, finishes, and other character-defining elements. Consider building and fabric integrity.

How does the proposed change affect the integrity and character of the structure or space?

Several alternatives for adaptive use are possible. Programmatic changes may prove to be an alternative design solution. In instances in which adaptive use of an interior space seems feasible, the designer should propose as few changes as possible and question the necessity of each. Some buildings can undergo minor modifications to allow upgrading. All changes to upgrade structures should respect the materials, scale, and ambience of the original design.

The cumulative effect of fabric modifications can be detrimental to cultural resources. Energy conservation, adaptive use, and accessibility compliance can all require physical changes to structures and sites. Any one modification may appear minor and consistent with departmental clearance procedures, but over a period of years a series of these minor changes can add up to an adverse impact. With changes in staff, memory of the original configuration is slowly lost by those responsible for the buildings' care and preservation, a problem of "inherited context." In all such cases, an orientation of reversibility should be pursued, alternative solutions explored, and proper clearance procedures followed. In addition, such work should be properly recorded, and removed fixtures should be properly tagged and put in the park curatorial collection.

RECOMMENDATIONS FOR FURTHER STUDIES

THE SITE

1. A **cultural landscape study** needs to be completed. The study will better detail the evolution of the site, and it will develop better treatment recommendations for landscape features not discussed in this report. Products of the study will include a design development plan for all landscape features and compatibility guidelines for new or replacement landscape elements. Other areas of the national historic landmark district need to be included in the cultural landscape study.
2. Upon completion of a cultural landscape study, a **cultural landscape management plan** should be undertaken. This plan includes specifics for site maintenance, replacement of plant materials, and general maintenance practices for the grounds. This maintenance plan should be integrated into the maintenance management system for the park.
3. The **national historic landmark nomination** needs to be amended to include an inventory of the landscape elements in the district and an explanation of their significance.
4. A **comprehensive drainage plan** needs to be done. This plan would concentrate on, but not be limited to, the developed areas of Frijoles Canyon. Soil borings, slope stabilization tests, and other tests will be conducted. Existing drainage patterns and the related utilities will be studied for their effectiveness. From this information, a drainage package will be developed with specific treatment recommendations for safety, diversion ditches, building protection, and landscape protection.

THE BUILDINGS

1. The survey and analysis undertaken to date consists of 14 buildings and indicates the range of **mortar and stucco mixes** used. It is felt that completing this survey would only verify these results. The results of this study should be included in the historic structures preservation guide and become an integral part of ongoing maintenance.
2. According to park personnel, **matching paving flagstone** is available nearby but under separate agency jurisdiction. Access to this material should be thoroughly explored to ensure a more compatible replacement now and in the future.
3. All buildings should be surveyed for any **building or life safety code violations** in a manner similar to the recent accessibility survey. This point is particularly appropriate in areas of public assembly.
4. A **historic furnishings and fixtures study** needs to be completed in the very near future. The study will trace the history and significance of the furnishings and light fixtures, and it will provide park management with guidelines for use, storage, and management of these resources.
5. A **finding aid** to the park collections of CCC photographs, oral history tapes, construction documents, and monthly reports will be completed. The finding aid will also include information on the types of data available on the Bandelier CCC projects at the Denver Federal Records Center and the National Archives.

ACCESSIBILITY AND ADAPTIVE USE

Section 6 dealt with these issues in a general way and provided a system for assessing their impact on the structures and site. Because no programmatic direction existed for any such interventions, the impact they might have on any particular building or site area was unknown. Future planning or design efforts should further assess any specific impacts, within the context of a stated program objective.

APPENDIX A: LIST OF EXISTING PLANTS

| Common Name/Botanic Name | Study Symbol |
|---|--------------|
| Alder/ <i>Alnus tenuifolia</i> | AL |
| Box elder/ <i>Acer negundo</i> | BE |
| Birch/ <i>Betula occidentalis</i> | SR |
| Cottonwood/ <i>Populus Angustifolia</i> | CW |
| Desert olive/ <i>Forestiera neomexicana</i> | – |
| Douglas fir/ <i>Pseudotsuga menziesii</i> | DF |
| Fruit tree/(various) | FT |
| Hackberry/ <i>Celtis reticulata</i> | HB |
| Juniper/ <i>Juniperus</i> (species) | JV |
| Locust/ <i>Robinia neomexicana</i> | – |
| Oak/ <i>Quercus gambelli</i> | OK |
| Piñon pine/ <i>Pinus edulis</i> | PI |
| Ponderosa pine/ <i>Pinus ponderosa</i> | PD |
| Shrubby cinquefoil/ <i>Potentilla fruticosa</i> | – |
| Virginia creeper/ <i>Partherocissus vitacea</i> | – |

APPENDIX B: MEMORANDUM FOR REGIONAL DIRECTOR, REGION III

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HEADQUARTERS, SOUTHWESTERN MONUMENTS
COOLIDGE, ARIZONA

April 29, 1941

Memorandum for the Regional Director, Region III:

We are considerably concerned over the early abandonment of the CCC camp at Bandelier National Monument as it appears that some of the urgently-needed work cannot be completed prior to that time. The diversion of flood waters back of the Lodge area has never been completely worked out, and in this connection the following is quoted from Custodian Thomas' letter of April 24:

"The steep sandy slope behind the Lodge is very unstable. Not much grass or shrubbery is present to hold the loose soil. Heavy rains during last summer brought down great quantities of sand, gravel, and ash, completely filled the drainage structures back of the Lodge and overflowed the retaining wall. After one storm last summer we hauled almost a hundred truck-loads of sand out of the hotel yard. Water flowed into the operator's garage, through the employees' dormitory, and came within inches of flooding four or five cabins at the back of the hotel grounds. In spite of all the hauling we did last summer, the drainage structures are still completely filled. A heavy rain this summer will undoubtedly do considerable damage and cause large expense in removing debris. I believe that the chief difficulty is no provision was made originally to divert water which falls on the mesa above the rim of the canyon from coming directly over the canyon wall and down the sandy slope. If this water were diverted I believe that drainage structures could be constructed to care for what water falls on the actual slope. Heavy planting would also tend to control the slope itself, but the present structures will not accommodate the run-off from above added to what actually falls on the slope."

It will be appreciated if a representative of the Branch of Engineering of your Office can study this problem to see if it is feasible to correct this condition with CCC forces before this camp is disbanded. Will you advise us when we may anticipate the receipt of this information.

cc: Chase
Thomas

Superintendent

APPENDIX C: 1939 PLANT LIST

This is the first listing of plants that were to be planted and indicates that the planter, James Fulton, apparently dedicated his entire month toward planting.

Trees

Pinus edulis – 40, seedlings – 26
Pinus ponderosa – 7
Juniperus monosperma – 11, seedlings – 7
Acer negundo

Shrubs

Chrysothamnus Sp. – 59
Artemisia Sp. – 16
Fallugia Sp. – 11
Sambucus Sp. – 3
Rosa Sp. – 42
Ptelea Sp. – 3
Berberis Sp. – 15
Ribes Sp. – 11
Cercocarpus – 44
Rhus trilobata – 1
Ramnus Sp. – 2

Seedlings obtained from the SCS nursery: 100 *Celtis occidentalis*, 2,000 *Juniperous monosperma*, 1,000 *Parthenocissus vitacea*, 500 *Pinus flexilis*, 200 *Populus angustifolia*, 350 *Prunus americana*, 1,200 *Rhus trilobata*, 200 *Rosa fendleri*, 200 *Yucca elata*.

Additional plant material used at Bandelier:

Parthenocissus vitacea
Rhus trilobata
Rosa fendleri
Yucca elata

Ribes cereum
Ptelea crenulata
Quercus fendleri
Robinia neomexicana
Prunus melanocarpa
Foresteria neomexicana
Juniperus scopulorum
Quercus undulata
Berberis fendleri

**APPENDIX D: TREES AND SHRUBS OF BANDELIER NATIONAL MONUMENT
AS OBSERVED BY STAFF**

| Common Name | Botanic Name | Acceptable | Preferred |
|------------------------|---------------------------------|------------|-----------|
| PINE FAMILY | | | |
| Piñon pine | <i>Pinus edulis</i> | | X |
| Limber pine | <i>P. flexilis</i> | X | |
| Ponderosa pine | <i>P. ponderosa</i> | | |
| Engelman spruce | <i>Picea engelmannii</i> | | |
| Blue spruce | <i>P. pungens</i> | | |
| Douglas fir | <i>Pseudotsuga taxifolia</i> | | |
| White fir | <i>Abies concolor</i> | | |
| Alpine fir | <i>A. lasiocarpus</i> | | |
| | | | |
| Alligator juniper | <i>Juniperus deppeana</i> | | X |
| Rocky Mountain juniper | <i>J. scopulorum</i> | X | |
| One-seeded juniper | <i>J. monosperma</i> | | |
| Dwarf juniper | <i>J. communis</i> | | |
| WILLOW FAMILY | | | |
| Narrowleaf cottonwood | <i>Populus angustifolia</i> | | X |
| Rio Grande cottonwood | <i>P. wislizeni</i> | | |
| Quaking aspen | <i>P. tremuloides</i> | | |
| Pacific willow | <i>Salix lasiandra</i> | | |
| Peachleaf willow | <i>S. amygdaloides</i> | | |
| Coyote willow | <i>S. exigua</i> | | |
| Yellow willow | <i>S. lutea</i> | | |
| Scouler willow | <i>S. scouleriana</i> | | |
| BIRCH FAMILY | | | |
| Water birch | <i>Betula occidentalis nutt</i> | | |
| Thinleaf alder | <i>Ainus tenuifolia</i> | | |
| BEECH FAMILY | | | |
| Gambel oak | <i>Quercus gambelli</i> | X | |
| Scrub oak | <i>Quercus</i> , sp | X | |
| Live oak | <i>Q. undulata</i> | | |
| ELM FAMILY | | | |
| Netleaf hackberry | <i>Celtis reticulata</i> | | |

| Common Name | Botanic Name | Acceptable | Preferred |
|-------------------------------|---------------------------------|------------|-----------|
| ROSE FAMILY | | | |
| Utah serviceberry | <i>Amelanchier utahensis</i> | | |
| Cliffrose | <i>Cowania stansburiana</i> | | |
| Mountain mahogany | <i>Cerocarpus montanus</i> | X | |
| Common chokecherry | <i>Prunus virginiana</i> | X | |
| Mountain ash | <i>Sorbus dumosa</i> | | |
| PEA FAMILY | | | |
| New Mexico locust | <i>Robinia neomexicana</i> | | |
| RUE FAMILY | | | |
| Narrowleaf hoptress | <i>Holacantha emoryi</i> | X | |
| MAPLE FAMILY | | | |
| Inland box elder | <i>Acer negundo</i> | X | |
| Rocky Mountain maple | <i>A. glabrum</i> | | |
| TAMARISK FAMILY | | | |
| *Salt cedar | <i>Tamarix gallica</i> | | |
| DOGWOOD FAMILY | | | |
| Red-osier dogwood | <i>Cornus stolonifera</i> | | |
| OLIVE FAMILY | | | |
| Desert olive | <i>Forestiera phillyreoides</i> | X | |
| AILANTHUS FAMILY | | | |
| *Tree of heaven | <i>Ailanthus altissima</i> | | |
| SHRUBS AND OTHER WOODY PLANTS | | | |
| Buckbrush | <i>Ceanothus fendleri</i> | | |
| Gooseberry | <i>Ribes montigenum</i> | | |
| Wax currant | <i>Ribes cereum</i> | | |
| Woods rose | <i>Rosa cereum</i> | | |
| Apache plume | <i>Fallugia paradoxa</i> | X | |
| Sacred datura | <i>Datura meteloides</i> | | |

*Exotic Plants

| Common Name | Botanic Name | Acceptable | Preferred |
|----------------------|---------------------------------|------------|-----------|
| Fourwing saltbush | <i>Atriplex canescens</i> | | |
| Squawbush | <i>Rhus trilobata</i> | | X |
| Rabbitbrush | <i>Chrysothamnus nauseosus</i> | X | |
| Mormon-tea | <i>Ephedra</i> sp. | | |
| Sagebrush | <i>Artemisia tridentata</i> | | |
| Banana yucca | <i>Yucca bacata</i> | | |
| Narrowleaf yucca | <i>Y. angustissima</i> | X | |
| Walking stick cholla | <i>Opuntia imbricata</i> | X | |
| Yellow pricklypear | <i>O. comoressa</i> | X | |
| Riverbank grape | <i>Vitis vulpina</i> | X | |
| Virginia creeper | <i>Parthenocissus vitacea</i> | X | |
| Poison ivy | <i>Rhus toxicodendron</i> | | |
| Wild gourd | <i>Curcubita foetidissima</i> | | |
| Corral root | <i>Corallorrhiza multiflora</i> | | |
| Pine drops | <i>Pterospora andromedea</i> | | |

CANYON BOTTOM GRASSES

Hilaria jamesii
Bouteloua gracilis/curtipendula/eriopoda
Poa fendleriana
Andropogon scoparius
Oryzopsis hymenoides/micrantha
Sporobolus cryptandrus/contractus

APPENDIX E: NATIONAL HISTORIC LANDMARK NOMINATION

Form No 10-306 (Rev 10-74)

N. H. L. - ARCHITECTURE IN THE PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY - NOMINATION FORM

FOR FEDERAL PROPERTIES

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC

Bandelier Buildings and Frijoles Canyon Lodge

AND/OR COMMON

Bandelier National Monument CCC Historic District (Preferred)

2 LOCATION

STREET & NUMBER

CITY, TOWN

Bandelier National Monument

VICINITY OF

NOT FOR PUBLICATION

CONGRESSIONAL DISTRICT

3

STATE

New Mexico

CODE

35

COUNTY

Los Alamos and Sandoval 028 and 043

CODE

3 CLASSIFICATION

CATEGORY

OWNERSHIP

STATUS

PRESENT USE

☒ DISTRICT

☒ PUBLIC

☒ OCCUPIED

☐ AGRICULTURE

☒ MUSEUM

☐ BUILDING(S)

☐ PRIVATE

☐ UNOCCUPIED

☐ COMMERCIAL

☐ PARK

☐ STRUCTURE

☐ BOTH

☐ WORK IN PROGRESS

☐ EDUCATIONAL

☐ PRIVATE RESIDENCE

☐ SITE

PUBLIC ACQUISITION

ACCESSIBLE

☐ ENTERTAINMENT

☐ RELIGIOUS

☐ OBJECT

☐ IN PROCESS

☒ YES RESTRICTED

☒ GOVERNMENT

☐ SCIENTIFIC

☐ BEING CONSIDERED

☒ YES UNRESTRICTED

☐ INDUSTRIAL

☐ TRANSPORTATION

☐ NO

☐ MILITARY

☒ OTHER Government Residence

4 AGENCY

REGIONAL HEADQUARTERS (If applicable)

National Park Service -- Southwest Regional Office

STREET & NUMBER

P. O. Box 728

CITY, TOWN

Santa Fe

VICINITY OF

STATE

New Mexico

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE

REGISTRY OF DEEDS, ETC

National Park Service -- Southwest Regional Office

STREET & NUMBER

P.O. Box 728

CITY, TOWN

Santa Fe

STATE

New Mexico

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

List of Classified Structures Inventory

DATE

1984

☒ FEDERAL ☐ STATE ☐ COUNTY ☐ LOCAL

DEPOSITORY FOR

SURVEY RECORDS National Park Service

CITY, TOWN

Washington

STATE

D. C.

7 DESCRIPTION

| CONDITION | | CHECK ONE | CHECK ONE |
|--|---------------------------------------|---|---|
| <input type="checkbox"/> EXCELLENT | <input type="checkbox"/> DETERIORATED | <input checked="" type="checkbox"/> UNALTERED | <input checked="" type="checkbox"/> ORIGINAL SITE |
| <input checked="" type="checkbox"/> GOOD | <input type="checkbox"/> RUINS | <input checked="" type="checkbox"/> ALTERED | <input type="checkbox"/> MOVED DATE _____ |
| <input type="checkbox"/> FAIR | <input type="checkbox"/> UNEXPOSED | | |

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Bandelier CCC Historic District contains 31 buildings all of pueblo revival design executed with a solid architectural unity that romantically mimicked a small New Mexican village. Designed by National Park Service architects and landscape architects and built by the Civilian Conservation Corps, this group of buildings provided a complete development for a national monument--from office space and residences for employees to lodging for guests.

Included within the Bandelier CCC Historic District are the thirty-one buildings, an entrance road, and minor structures such as stone water fountains and faucets in the former campground. Twenty-nine of the buildings are in Frijoles Canyon--a green canyon cut into the Pajarito Plateau containing thirteenth through sixteenth century cliff dwellings, other archeological features, and a permanent stream. Two of the buildings are on the mesa top along the entrance road that leads down into the canyon.

The buildings were designed as the administrative, residential, and maintenance core of Bandelier National Monument, and as a lodge for tourists who visited the monument. The lodge was necessary because other accommodations were in Santa Fe, reached in the 1930s by eighteen miles of poor dirt road and seventeen miles of partially paved highway.

The buildings are pueblo revival structures (also called Spanish pueblo style), and nearly all are single-story structures. The only two-story structures are a small former concessioner's residence (B-18) and the fire lookout (B-30). The main buildings were designed to give the appearance of a small southwestern village wrapped around three sides of a central wooded plaza. The fourth side of the plaza is a green strip bordering the stream known as Rito de los Frijoles. Additional lodge units and the monument's residential and maintenance areas were built off the main plaza. The lodge units were reached by a series of flagstone pathways that led up from the lodge lobby (B-17) through small courtyards and patios that stepped up the hillside on several levels and that were planted with native vegetation. The maintenance yard, built parallel to the entrance road, was walled off from visitor view. The rear of one of the maintenance buildings (B-3) provided a third (southeast) side of the plaza. The residential structures were tucked away up the hillside from the entrance road, hidden from visitor view by vegetation and topography. The two main street facades were in front of the lodge lobby and dining room (B-17 and B-15) and in front of the museum/headquarters (B-2).

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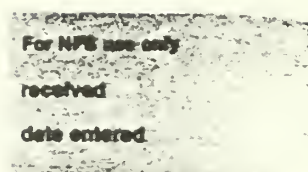
The buildings and the spaces between the buildings created a very strong sense of place still evident today. This sense of place, with its extremely evident New Mexican flavor is primarily due to the thoroughness of design--from the landscape architecture that is inseparable from the building architecture, down to the interior design details. The quality of workmanship of everything from the stone-cutting to the finish details of the furnishings was extremely high. The craftsmanship of the Bandelier CCC camp was held up as the prime example of CCC accomplishments throughout all of the southwestern national parks and monuments. The woodworkers were so good that they were entrusted to make the doors for the new museum at Tumacacori National Monument, which replicated the extremely decorative work from the doors of another Spanish colonial mission. The quality of the architectural and landscape design was as high.

All of the buildings were constructed of stone -- Bandelier rhyolite tuff. The buildings were connected to each other by a series of stone walls, plastered portals, flagstone walkways, and stone-edged planting beds. The entrance road was partially bordered with a stone guardrail and stone-lined gutter. The consistent use of stone created an overwhelming sense of visual unity. The interplay of masses and voids, with a solid building mass relieved by a recessed portal, for instance, added spatial diversity to that strong unity.

The buildings responded to the existing topography--from the flat canyon floor to the steeper terrain up toward the base of the cliffs. As an example, one lodge structure (B-19) was constructed on several levels as it proceeded up toward the base of the cliffs. The stepped parapets along the roofs appropriately reflected these elevation changes. This response to the topography provided an additional organic tie between the buildings and the site. The placement of the buildings created additional spaces--the spaces between the buildings had as much architectural interest as the spaces inside the buildings.

The buildings were all constructed with similar architectural elements, and they are summarized here along with alterations that have occurred to the buildings as a group over the years. The list that follows includes the building numbers, names, date of construction, original use, present use, and any other noteworthy alterations.

Nearly all of the buildings were constructed with stone footings. Walls were gently battered and washed with a thin coat of mud

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plaster, designed to wear off giving the rough coursed ashlar masonry a more weathered and used appearance. Projecting viga (round, peeled beam) ends were cut with an axe, emphasizing a more primitive appearance. Parapets surrounded the roofs, which were drained by canales (scuppers). Most windows were multi-light casements of wood frame construction. Some of the windows (B-1) were covered with band-sawn grilles in zig-zag patterns. Heavy wood doors were mortised together with multiple inset panels or were three layers of thick tongue-and-groove (V-groove) boards. Doors and windows were capped with large hewn lintels. Portal walls were stuccoed and painted. The original mud plaster finish in some of the portals was removed shortly after construction due to maintenance problems and replaced with stucco. Corbels topping the columns supporting portal roofs were decoratively carved with Spanish colonial designs.

On the interiors, most ceilings were peeled vigas, supporting aspen latias in perpendicular or herringbone patterns. Rooms were built with corner fireplaces, one of the main sources of heat. Many rooms had bancos (built-in benches) and built-in shelves. Most interior walls were finished with hard plaster, often painted with Spanish colonial and Indian designs. Interior woodwork in some of the buildings (B-2, B-17) was carved in extremely decorative designs (railings, built-in shelves, panelling, corbels, beams, etc.). Room configuration had the typical pueblo revival additive quality, where a link between one room and the next often meant a small change in level of one or two steps. Most floors were flagstone, varnished to a high gloss, although concrete and some wood floors were constructed.

Furniture for each building was constructed by the CCC and included desks, beds, wood boxes, and chairs for the lodge cabins. The CCC built couches, chairs, and coffee tables for the lodge lobby, and dining tables and chairs for the dining room—all of Spanish colonial design. Even the hardwood curtain rods in the interiors picked up the architectural theme. Light fixtures, mirrors, and switchplates were also of Spanish colonial design. The development also benefitted from the Federal Arts Project. Pablita Velarde did a series of paintings for the museum. Helmut Naumer completed four pastels of Rio Grande pueblo scenes. Chris Jorgensen did a watercolor of desert scenery. Sculptor Raymond Terken made models for museum exhibits.

Original uses for the buildings included an administrative center for the monument, a lodge with a dining room and cabins for tourists, a maintenance area, and a residential area. Some of those uses have changed and are detailed in the building list

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that follows, but they are briefly summarized here. The lodge closed permanently in 1978 after more than a decade of diminishing operations. Lodge cabin units were converted to park housing and office spaces. Most of the lodge units were constructed with two bedrooms sharing a bath. As housing, one bedroom was turned into a living room/kitchenette, and the other left a bedroom. The administrative office functions of the monument were moved into the former lodge dining room and employee dormitory (B-15 and B-16). When the dining room and lunch room closed, the concessioner opened a small snack bar in the former curio shop attached to the old lodge lobby. The lodge lobby was turned into a new, larger curio shop (all in B-17). These changing functions necessitated some interior modifications also summarized in the building list. The maintenance and other residential structures have retained their uses with only minor building modifications.

Most of the buildings were originally heated with a variety of fuels--propane, wood, oil, and coal. These multiple fuels were replaced with natural gas during the 1960s and early 1970s. Gas wall furnaces were installed in most of the buildings at that time. The original built-up roofs were replaced with a spray urethane foam treatment in 1980. Many of the original furnishings remained in use in the structures; others were accessioned into the park collection and are in storage. Original lighting fixtures remain, but have been augmented in office spaces by removable fluorescent lights. All original furnishings, art work, and light fixtures are covered by the nomination form. Other changes included the enclosing of several portal bays with removable wood frame partitions for concessioner's storage. The wooded plaza was cut into in 1952, and essentially turned into a wooded parking island. The original multi-light casement windows in the residential buildings were replaced with insulated thermal-pane casements about 1980. Skylights were added to a few of the residential structures about the same time. In general, the exteriors look very much as they did shortly after construction. Most of the interior changes were done without harming historic fabric, so they are reversible. Two small pit toilets constructed concurrent with the fire lookout and the entrance station were demolished within the past twenty years. Other than those, all of the buildings constructed by the CCC remain.

The buildings are in fair to good condition. On-going projects include rehabilitation of water, sewer, electrical, and gas lines; replacement of flagstone and curbstone; rehabilitation of decaying wood structural members; and installation of

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insulated windows and fire alarm systems.

List of Buildings

Note: "Original use" is the historic name and/or use; "present use" in most instances is the name by which the building is commonly known today, in addition to its number.

B-1

1934

Original use: comfort station and public showers for former campground.

Present use: comfort station for picnic area.

Alterations: pumice block partition in men's room shower, 1959; concrete block retaining wall behind structure to help drain water away from building, unknown date.

B-2

1935 and 1936, 1939-40

Original use: originally two structures, the museum (1936) and the administrative offices (1935), connected by a portal; addition constructed between the two buildings in 1939-40 which added a lobby behind the portal.

Present use: visitor center.

Alterations: most of old office space converted to audio-visual room in 1969, resulting in removal of wood frame office partitions, light-proofing windows, blocking off small portion of window at rear of building for AV equipment.

B-3

1935

Original use: warehouse.

Present use: warehouse.

Alterations: interior partitions of wood frame and metal lath added in 1939, and more windows added at that time while portion of building used for office space. 1945-1953+ northeast portion of building used as two-room apartment.

B-4

1935

Original use: garage and blacksmith shop.

Present use: carpenter's shop.

Alterations: fire in 1938 necessitated partial rebuilding of structure; new lighting installed 1977.

B-5

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1935

Original use: gas and oil house.

Present use: gas and oil house.

Alterations: modern gas pumps and bollards added in recent years, replacing earlier units.

B-6

1935-36

Original use: garage.

Present use: equipment shed (for storing lumber and forest fire suppression tools). Alterations: six of the eight bays enclosed, and interior partitions constructed by 1977; concrete floor poured over original gravel floor in 1977.

B-7

1936

Original use: residence.

Present use: residence.

Alterations: wood storage shed, 1939; bedroom addition, 1941; kitchen cabinets installed 1967; thermal pane windows installed 1977.

B-8

1937

Original use: residence.

Present use: residence.

Alterations: wood storage room added 1939; living room converted to bedroom and new living room constructed 1941; kitchen remodelled and back patio enclosed 1973.

B-9

1935

Original use: comfort station.

Present use: comfort station.

Alterations: 1940 alteration to allow for installation of furnace; interior rehabilitated in 1966; back wall of toned slump block constructed on portal in recent years (date uncertain).

B-10

1937

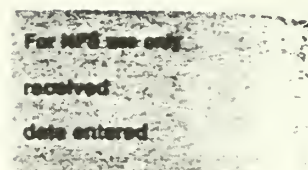
Original use: ranger dormitory and garage.

Present use: temporary quarters, garage, and laundry room.

Alterations: laundry room addition constructed 1940; southeast living space remodelled into kitchen and porch enclosed with slump block wall in 1973; thermal pane windows installed, probably 1978.

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B-11
1937
Original use: residence.
Present use: residence.
Alterations: wood storage building and root cellar added 1939.

B-12
1937
Original uses: CCC carpentry building, then concessioner's storage and laundry building beginning in 1941.
Present use: storage.
Alterations: southeast end of building partitioned off into laundry space in 1941; partitioned room further divided into two more additional spaces in recent years (unknown date); concrete block addition constructed on northwest corner of building (unknown date).

B-13
1937
Original use: garage for Frijoles Canyon Lodge.
Present use: meeting room.
Alterations: smaller doors and windows added in large garage bay doors, unknown date.

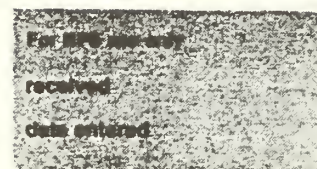
B-14
1939
Original use: oil and gas house, Frijoles Canyon Lodge.
Present use: office supply storage.
Alterations: gas pump, which is old and may be original, has been moved four feet from original location and mounted on small concrete pedestal.

B-15
1937
Original use: Dining room, kitchen, and lunch room for Frijoles Canyon Lodge.
Present use: half of park administration building.
Alterations: dining terrace covered with fiberglass roof in 1960; 1968 changes included partitioning kitchen and lunch room into office spaces after removing equipment, constructing an insulated roof over the dining terrace, and partitioning a small portion of the dining terrace into office space.

B-16
1938
Original use: employee dormitory, Frijoles Canyon Lodge.

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Present use: half of park administration building.
Alterations: connected to B-15 in 1968 as part of the
remodelling, by construction of dining terrace roof; back
terrace enclosed at later (unknown) date.

B-17

1939

Original use: Lobby and sales room, Frijoles Canyon Lodge.

Present use: sales room remodelled into snack bar in 1968;
lobby and writing room turned into souvenir shop same year.

B-18

1938

Original use: operator's residence, Frijoles Canyon Lodge.

Present use: housing for Mrs. Evelyn Frey, the former operator
and a park VIP. Alterations: none, other than changes in heating
system.

B-19

1939

Original use: Cabin Group A, Frijoles Canyon Lodge.

Present use: park housing.

Alterations: kitchenettes added between 1968 and 1978.

B-20

1938

Original use: Cabin Group B, Frijoles Canyon Lodge.

Present use: park housing.

Alterations: kitchenette added, between 1968 and 1978.

B-21

1938-39

Original use: building known as "the kiva" and contained the
lodge's hot water system, cedar closets for linen storage in the
basement, and men's and women's restrooms and a utility room on
the first floor.

Present use: park storage.

Alterations: none known.

B-22

1938

Original use: power house.

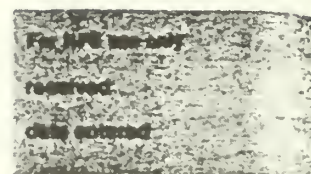
Present use: power house.

Alterations: machinery changed on interior when the monument
obtained commercial electrical service.

B-23

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1939

Original use: Cabin Group D, Frijoles Canyon Lodge.

Present use: park offices.

Alterations: fluorescent lights added to augment historic lights in 1977.

B-24

1939

Original use: Cabin Group C, Frijoles Canyon Lodge.

Present use: office space and park housing.

Alterations: kitchenettes added to two units at the southwest end of the building, between 1968 and 1978.

B-25

1939

Original use: stable and chicken house, Frijoles Canyon Lodge.

Present use: stable for monument stock.

Alterations: six stalls rehabilitated in 1953; new pole corral constructed 1956; minor changes to living quarters, 1968.

B-26

1940

Original use: entrance station.

Present use: entrance station.

Alterations: portion of patio wall removed in 1965; stop lights installed on building in 1976.

B-27

1940

Original use: Cabin Group E-1, Frijoles Canyon Lodge.

Present use: park housing.

Alterations: kitchenettes installed between 1968 and 1978.

B-28

1940

Original use: Cabin Group E-2, Frijoles Canyon Lodge.

Present use: park housing.

Alterations: kitchenettes added between 1968 and 1978.

B-29

1940

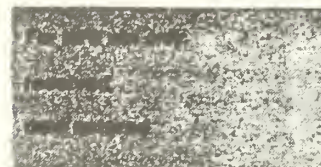
Original use: Cabin Group E-3, Frijoles Canyon Lodge.

Present use: park library and curatorial storage.

Alterations: southeast unit partitioned into two rooms in 1980, celotex ceiling installed, styrofoam placed over windows, and plumbing fixtures removed from the bathroom; library underwent considerably less alteration; bars installed on windows, unknown

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date.

B-30

1941

Original use: Fire lookout.

Present use: fire lookout.

Alterations: kitchen/bathroom addition built on to small first floor residence in 1956; window framing angle changed from perpendicular-to-the-ground to angling further out toward the eaves (date unknown); new steps and guardrail constructed around catwalk in 1977.

B-32

1941

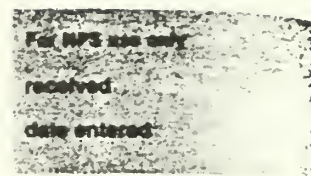
Original use: monument custodian's residence.

Present use: superintendent's residence.

Alterations: skylight installed in 1981; thermal pane windows installed circa 1978.

Archeological Potential. Because of location at the base of cliff dwellings that received intensive use over several centuries, archeological potential within the canyon section of the district would seem to be high. The massive amount of excavation required for each building, however, lowers the potential for prehistoric resources. The historic records covering the building construction make no note of any archeological resources found in the process of construction. All those working on construction of the buildings--from the architects to project superintendents to laborers--were aware of Bandelier's archeological resources and the laws governing their protection. The CCC enrollees were taught about the importance of the archeological resources. Archeologist Paul Reiter and others were working on stabilizing ruins just a short distance away in the canyon. The landscape architect was very cautious about his placement of a baseball field for the CCC enrollees, but he never wrote of similar concerns on the placement of the buildings. The records do indicate noteworthy archeological discoveries in other areas of the monument, but no mention is made in connection with construction.

Potential for sub-surface historical archeological resources on the mesa top, edging the road into the canyon, and in the canyon proper exists but is limited. The CCC destroyed all of the old buildings in the canyon, including any buildings that may have been left over from the time that Judge Abbott and his wife occupied the canyon (1907) and the buildings constructed by George and Evelyn Frey for the old hotel/dude ranch they ran in the

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canyon (1925+). The CCC filled in a portion of a historic irrigation ditch and turned it into a trail. The CCC also removed what remained of "an old Mexican cabin" that appeared on a 1932 map. The CCC did not disturb the historic "threshing floor" that appeared on the earliest survey maps. When the CCC moved out of the canyon, the National Park Service cleaned up and "naturalized" the site of the former CCC camp and regraded the area to more natural contours. Thus, most surface remains probably were removed or disturbed, with the exception of Mrs. Frey's orchard and a section of the irrigation ditch she used. Additional historical archeological resources in Frijoles Canyon may turn up in the course of the monument's archeological survey, which will be conducted within this decade.

Intrusions

The only non-conforming intrusion is a temporary metal building--a portable storage building -- next to B-29. This structure is only visible behind B-29.

Exclusions

Trails constructed by the CCC within the monument were not included in this National Register Form. So much change has occurred to the trails over the years--primarily re-building because of damage caused by natural forces--that discerning exactly which portions were CCC-built and which sections were of more recent origin would be nearly impossible. The trails were well designed and laid out by landscape architects, but this fact alone does not make them eligible. They were built to follow reasonable grades and with appropriate scenic interest to keep the hiker occupied while proceeding to major archeological features throughout the park. The construction of the trails did not entail anything of major engineering significance. The small bridges constructed by the CCC were either entirely removed or replaced through the years. Sections of trails built by the CCC were re-routed for resource management concerns. Minor changes still occur to the trails each year. For these reasons, the trails did not have enough integrity or significance to be included on this nomination form.

8 SIGNIFICANCE

| PERIOD | | AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW | | | | |
|--|--|--|---|---|--|--|
| <input type="checkbox"/> PREHISTORIC | <input type="checkbox"/> ARCHEOLOGY-PREHISTORIC | <input type="checkbox"/> COMMUNITY PLANNING | <input type="checkbox"/> LANDSCAPE ARCHITECTURE | <input type="checkbox"/> RELIGION | | |
| <input type="checkbox"/> 1400-1499 | <input type="checkbox"/> ARCHEOLOGY-HISTORIC | <input type="checkbox"/> CONSERVATION | <input type="checkbox"/> LAW | <input type="checkbox"/> SCIENCE | | |
| <input type="checkbox"/> 1500-1599 | <input type="checkbox"/> AGRICULTURE | <input type="checkbox"/> ECONOMICS | <input type="checkbox"/> LITERATURE | <input type="checkbox"/> SCULPTURE | | |
| <input type="checkbox"/> 1600-1699 | <input checked="" type="checkbox"/> ARCHITECTURE | <input type="checkbox"/> EDUCATION | <input type="checkbox"/> MILITARY | <input checked="" type="checkbox"/> SOCIAL/HUMANITARIAN | | |
| <input type="checkbox"/> 1700-1799 | <input checked="" type="checkbox"/> ART and Crafts | <input type="checkbox"/> ENGINEERING | <input type="checkbox"/> MUSIC | <input type="checkbox"/> THEATER | | |
| <input type="checkbox"/> 1800-1899 | <input type="checkbox"/> COMMERCE | <input type="checkbox"/> EXPLORATION/SETTLEMENT | <input type="checkbox"/> PHILOSOPHY | <input type="checkbox"/> TRANSPORTATION | | |
| <input checked="" type="checkbox"/> 1900-Present | <input type="checkbox"/> COMMUNICATIONS | <input type="checkbox"/> INDUSTRY | <input type="checkbox"/> POLITICS/GOVERNMENT | <input type="checkbox"/> OTHER (SPECIFY) | | |
| | | <input type="checkbox"/> INVENTION | | | | |

| | | | |
|----------------|--------------|-------------------|---|
| SPECIFIC DATES | 1933-Present | BUILDER/ARCHITECT | Lyle Bennett and other National Park Service Personnel |
|----------------|--------------|-------------------|---|

STATEMENT OF SIGNIFICANCE

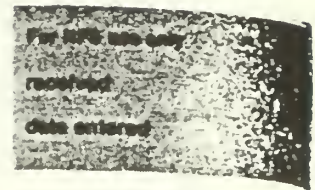
The Bandelier CCC Historic District is of exceptional significance in American architecture. As a group the district represents a significant, distinctive and exceptional entity of pueblo revival (or Spanish-pueblo) style architecture. The district possesses an architectural unity of theory and style that begins with the site and building design and continues through into the finer interior details. All of the work was executed at extremely high standards of craftsmanship, which makes the district even more remarkable considering the meager funding and lack of skilled labor. The district is a prime example illustrating the guiding principles of National Park Service architecture (often called "rustic architecture" or "parkitecture") that developed during the 1920s and 1930s. Also, the Bandelier CCC Historic District is the largest collection of CCC-built structures in a national park and perhaps in the nation that has not been altered by the addition of new structures within the district.

The Bandelier CCC Historic District is of regional significance in American social history. First, the Bandelier CCC Camp employed several thousand men, mostly local New Mexican people, from 1933 to 1941 as part of President Franklin D. Roosevelt's New Deal. Not only did the unskilled people involved learn building and crafts skills in carrying out NPS designs, but they received so much on-the-job training that they carried out this extremely ambitious program at levels of skill comparable to master craftsmen. Second, the buildings played a minor supportive role during World War II to top-secret Project Y of the Manhattan District Engineer (the "Manhattan Project") by housing nuclear physicists, technicians, and contractors connected with the development of the atomic bomb at Los Alamos a few miles away.

From the earliest days of the National Park Service, architects, landscape architects, and park service directors had definite ideas about the sorts of structures they felt were suitable for national parks, spurred on by great minds in the private sector

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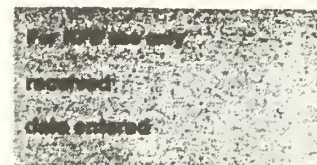
such as Frederick Law Olmstead, landscape architect James S. Pray of Harvard University, and J. Horace MacFarland of the American Civic Association. Experimentation in building style and site design throughout the 1920s resulted in the formulation of the principles of what is now termed "rustic architecture." New graduates and young apprentice architects and landscape architects were pulled into the park service and schooled in this "environmental design," under the guidance of NPS landscape architect Thomas Vint and others.

The basic precept of "rustic architecture"--or "parkitecture" as they sometimes called it--was that any structure built in a park should harmonize with its environment. Every fireplace and picnic table, and every comfort station, ranger cabin, and visitor center should look as if it belonged in its setting. Structures harmonized with their natural environments through the use of onsite or locally available materials, such as granite and massive timbers in Yosemite, and rhyolite tuff at Bandelier. Structures also related to the surrounding topography through shape and form. Here they were designed to fit the canyon floor and gradually rise up to the base of the cliffs. In addition, structures often reflected appropriate local cultural traditions--pueblo revival in the southwest, or colonial revival in the east. Careful landscape planning, which here included staining of blasted rocks along the entrance road to make them appear more weathered, contributed greatly to the overall effect. Rustic architecture was not a style, even though its practitioners often referred to it as such. Rather, it was a movement that could incorporate within its grasp any number of styles, and at Bandelier the chosen style was pueblo revival.

The style chosen for development in each National Park area was not necessarily devoid of outside architectural influences. As long as an architectural style fell within the precepts of rustic building design, its designers considered it appropriate. Pueblo revival--with its natural building materials, battered walls, and small scale--was appropriate. The international style, with so much concrete, straight lines, and banded windows, would not have been considered appropriate. The adoption of pueblo revival fit the Bandelier locale perfectly -- both in the choice of materials and recent architectural trends. A large proportion of new construction in Santa Fe was being done in what was termed the "Santa Fe style" (heavy on the adobe, vigas, corner fireplaces, latias, decorative corbels, and the like) at the time. A series of New Mexico mission churches were preserved or creatively restored during the 1920s and early 1930s. La Fonda, the large hotel in downtown Santa Fe, had a pueblo revival addition

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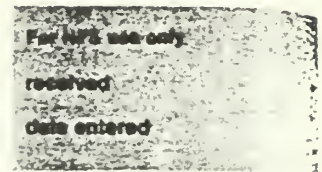
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designed in the late 1920s by architects John Gaw Meem and Mary Elizabeth Jane Colter. In 1930, Meem was designing buildings for the Laboratory of Anthropology in Santa Fe, an organization with direct connections to the National Park Service. This activity was admittedly noticed by the designers for Bandelier. The architects for the Bandelier development did not strive for an archeological correctness of duplicating a Spanish colonial/pueblo village, but rather used the basic building forms and elements as the springboard for some slightly romantic creativity. The result was a development strongly tied to Southwestern cultural traditions, as well as the design theories of "parkitecture."

The buildings harmonized with their natural setting through the use of onsite materials, small scale, color, texture, massing, and placement on the existing topography. The buildings harmonized with their cultural setting through their pueblo revival style, appropriate for that area of the southwest, and through the materials and techniques with which it was executed. The cultural connection is carried through the interior of the buildings, not only in paint schemes and room configurations, but also in the details of exposed vigas and latias, hewn lintels, carved corbels, handmade furniture and light fixtures.

The Emergency Conservation Work (ECW) Act was passed in 1933 and provided work relief by training unskilled men in a variety of skills in national parks, forests, and related areas. Bandelier had been transferred to the National Park Service from the Forest Service in 1932 and had only one government building--a small ranger residence. The ECW program was the key to the new monument's facility development. Some funding and large amounts of manpower became available. Beginning with a relatively modest comfort station in the campground and an entrance road in 1933 and 1934, the entire development project ended up with a total of thirty-one structures to its credit.

One valuable lesson that the designers and managers learned early was that breaking development into small components was an easy way to get through the bureaucratic constraints to get their designs built. The ECW program had a statutory \$1500 limitation on materials for building construction in National Parks, and that limitation could be overcome only with strong justification and approval from the NPS director in Washington. The original intent was that the CCC should construct only minor buildings in national parks. Also, most projects were scheduled for completion during one enrollment period--six months. Both of these factors limited the size of buildings that could be constructed. The designers circumvented these limitations by

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constructing in a modular manner. In B-2, for instance, the administrative offices and the museum were constructed as two separate buildings connected by a portal--which amounted to three projects. Several years later an additional room was constructed (a fourth project) linking the two buildings together into one large building. The development for the new Frijoles Canyon Lodge followed the same pattern: instead of one large building to house the main dining room and the lobby, two separate buildings (B-15 and B-17) were constructed, creating a comfortable portaled patio space between them. The choice of pueblo revival architecture meshed perfectly with these design constraints. The small scale of that type of architecture, and its medieval additive quality were the perfect answer to design limitations.

The \$1500 limitation on the cost of building materials necessitated the use of onsite or locally available materials. Stone, timber, gravel, sand, and clay were used with the only cost being that of transporting the materials from the site of origin to the building site. Timber for ponderosa vigas and aspen latias came from Sawyer Mesa and other areas of the adjacent Santa Fe National Forest. Most of the building stone came from the site of the monument's present amphitheatre, which was then U.S. Forest Service land. The use of locally available materials again coincided perfectly with the rustic architecture philosophy and pueblo revival design.

The buildings have changed some since construction, and these changes are detailed in the description section. Most of the changes were limited to the interiors. They were done to keep the buildings in use as functions changed, and done in such a manner that they are nearly all reversible. Additional minor interior changes should be expected in all of the buildings, as the monument's needs change. With the exception of two small pit toilets, all of the buildings constructed by the CCC for Bandelier's permanent development remain. All new construction since that time was done on the mesa-top, hidden from canyon view. The design unity evident in the district immediately after construction is still there; it has not been diluted by the construction of new buildings. This architectural unity is the most important factor in the district's significance. This is the only CCC-built development in the entire National Park system that has retained its original architectural flavor to this extent.

When the U.S. Army began assembling people for top secret Project Y of the Manhattan District Engineer (the development of the atomic bomb) in Los Alamos in late 1942 and early 1943, they were

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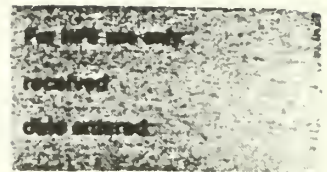
faced with a severe housing shortage. The newly forming Los Alamos Laboratory began pulling together a cadre of scientists and technical experts from universities, private industry, and branches of the armed forces. People were arriving faster than housing could be built. To alleviate that problem, the Governing Board of Los Alamos Laboratory searched for temporary housing alternatives nearby. One of the facilities used was Frijoles Canyon Lodge. The Army took over the lodge in June 1943 and began using it for housing. Lodge units were occupied by nuclear physicists and technicians and their families from June until October, 1943. The lodge was a social place not only for those who lived there, but also for those connected with the project who would often come down for dinner with the others. The scientists were not allowed to socialize outside the very tight security of Project Y personnel, but could at least enjoy each other's company in a comfortable setting away from the intensity of Los Alamos. From January through March 1944, the Lodge was occupied by 108 people working for McKee Construction Company--a contractor in charge of constructing housing in Los Alamos. The Army housed a small number of people in the Lodge in July 1944 and then returned it to the concessioner, Mrs. Evelyn Frey, in August 1944. After the bomb was dropped on Hiroshima, the staff at the monument finally found out who their tenants had been during 1943 and 1944.

The exceptional significance of the Bandelier buildings lies in their impact as a group. The thoroughness of the designers and the skill of the builders combined to create a unified development. Taken individually, each structure was a well-detailed, solid piece of work. Collectively the development was a masterpiece combining fine architecture, landscape architecture, and arts and crafts. The unity of design threaded through the landscaping to the buildings and their contents, down to the hardware on the doors and created a sense of place so strong that it predominates today. The whole was greater than the sum of its parts.

Designers The collaborative effort of the facility development at Bandelier is exemplified by the following list of designers. Obviously, with this many designers involved, it is apparent that the rustic architecture philosophy was well engrained in all of the NPS designers to obtain this unity in the final development. However, the contributions of one designer in particular should not be overlooked. Lyle Bennett designed the overall layout and the majority of the structures, and he was on site during most of the construction. His supervision gave the buildings the

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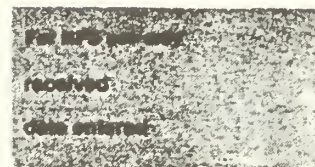
"signature" that is so evident.

The following is a list of architects and landscape architects whose names appear on the original drawings. (Note: The term "landscape architect" was the title used for many of the architects in the National Park Service Branch of Plans and Design. Many of those "landscape architects" had degrees in architecture, rather than landscape architecture. Also, some of those with degrees in landscape architecture designed buildings, further clouding the issue.) Bennett also designed the 1930s remodelling/rebuilding of the Painted Desert Inn at Petrified Forest National Monument and a number of buildings at Mesa Verde, all under consideration for landmark status.

- B-1: Jared Morse
- B-2: Administrative office building by Lyle Barcume; Museum building A. Paul Brown (possibly in collaboration with Lyle Bennett); lobby/patio addition by Lyle Bennett; 1969 A/V room by A. Norman Harp.
- B-3: Lyle Barcume; 1939 interior changes by J.M.E., possibly monument ranger James M. Eden.
- B-4: Lyle N. Barcume; 1939 heater room addition by Lyle E. Bennett.
- B-5: Lyle N. Barcume
- B-6: Lyle N. Barcume
- B-7: A. Paul Brown; 1939 alterations by Lyle Bennett and Del Jones.
- B-8: A. Paul Brown; 1939 alterations by Lyle Bennett and Del Jones.
- B-9: As yet unknown architect with initials A.B.J.; 1940 alterations by Lyle E. Bennett; 1966 alterations by A. Norman Harp.
- B-10: Designer unknown (probably Bennett); 1940 alterations by Lyle E. Bennett.
- B-11: Designer unknown (probably Bennett);; 1940 alterations by Lyle E. Bennett.
- B-12: Richard W. Thompson; 1941 alterations by Lyle E. Bennett.
- B-13: Richard W. Thompson
- B-14: Richard W. Thompson
- B-15: As yet unknown (probably Bennett)
- B-16: As yet unknown (probably Bennett)
- B-17: Robert W. Albers; 1939 heating plan by Ken Saunders; 1968 alterations by A. Norman Harp.
- B-18: Robert W. Albers
- B-19: Robert W. Albers
- B-20: Lyle E. Bennett
- B-21: Lyle E. Bennett

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B-22: Lyle E. Bennett
B-23: Lyle E. Bennett
B-24: Lyle E. Bennett
B-25: Lyle E. Bennett
B-26: Lyle E. Bennett
B-27: Lyle E. Bennett
B-28: Lyle E. Bennett
B-29: Lyle E. Bennett
B-30: Lyle E. Bennett
B-32: Lyle E. Bennett

Stone walls, walks, steps, soil preparation and other site design: Charles A. Richey.

Furniture: Charles D. Carter and Lyle Bennett.

Light fixtures and details: mainly Lyle E. Bennett.

Boundaries

The boundaries for this district were chosen to include all of the structures and the original site plan for the campground.

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10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY Approximately 54 acres

UTM REFERENCES

| | | | | | | | | | | | |
|---|------|---------|-------|----------|-------|---|------|---------|-------|----------|-------|
| A | 1,3 | 3,8,4 | 7,1,0 | 3,9,6,9 | 9,0,0 | B | 1,3 | 3,8,4 | 9,5,7 | 8,0,6,1 | 7,6,5 |
| | ZONE | EASTING | | NORTHING | | | ZONE | EASTING | | NORTHING | |
| C | 1,3 | 3,8,6 | 4,6,2 | 3,9,5,8 | 8,0,0 | D | 1,3 | 3,8,6 | 0,6,0 | 3,9,5,8 | 6,7,5 |
| | ZONE | EASTING | | NORTHING | | | ZONE | EASTING | | NORTHING | |

VERBAL BOUNDARY DESCRIPTION

See continuation sheet.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

| STATE | CODE | COUNTY | CODE |
|------------|------|------------|------|
| New Mexico | 35 | Los Alamos | 028 |
| STATE | CODE | COUNTY | CODE |
| New Mexico | 35 | Sandoval | 043 |

11 FORM PREPARED BY

NAME / TITLE

Laura Soulliere Harrison Architectural Historian

ORGANIZATION

National Park Service -- Southwest Regional Office

DATE

1985

STREET & NUMBER

P.O. Box 728

TELEPHONE

(505) 988-6787

CITY OR TOWN

Santa Fe

STATE

New Mexico

12 CERTIFICATION OF NOMINATION

STATE HISTORIC PRESERVATION OFFICER RECOMMENDATION

YES___

NO___

NONE___

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

In compliance with Executive Order 11593, I hereby nominate this property to the National Register, certifying that the State Historic Preservation Officer has been allowed 90 days in which to present the nomination to the State Review Board and to evaluate its significance. The evaluated level of significance is ___ National ___ State ___ Local.

FEDERAL REPRESENTATIVE SIGNATURE

TITLE

DATE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

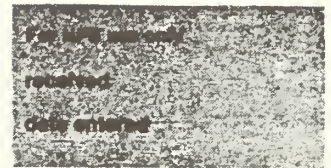
ATTEST:

DATE

KEEPER OF THE NATIONAL REGISTER

United States Department of the Interior
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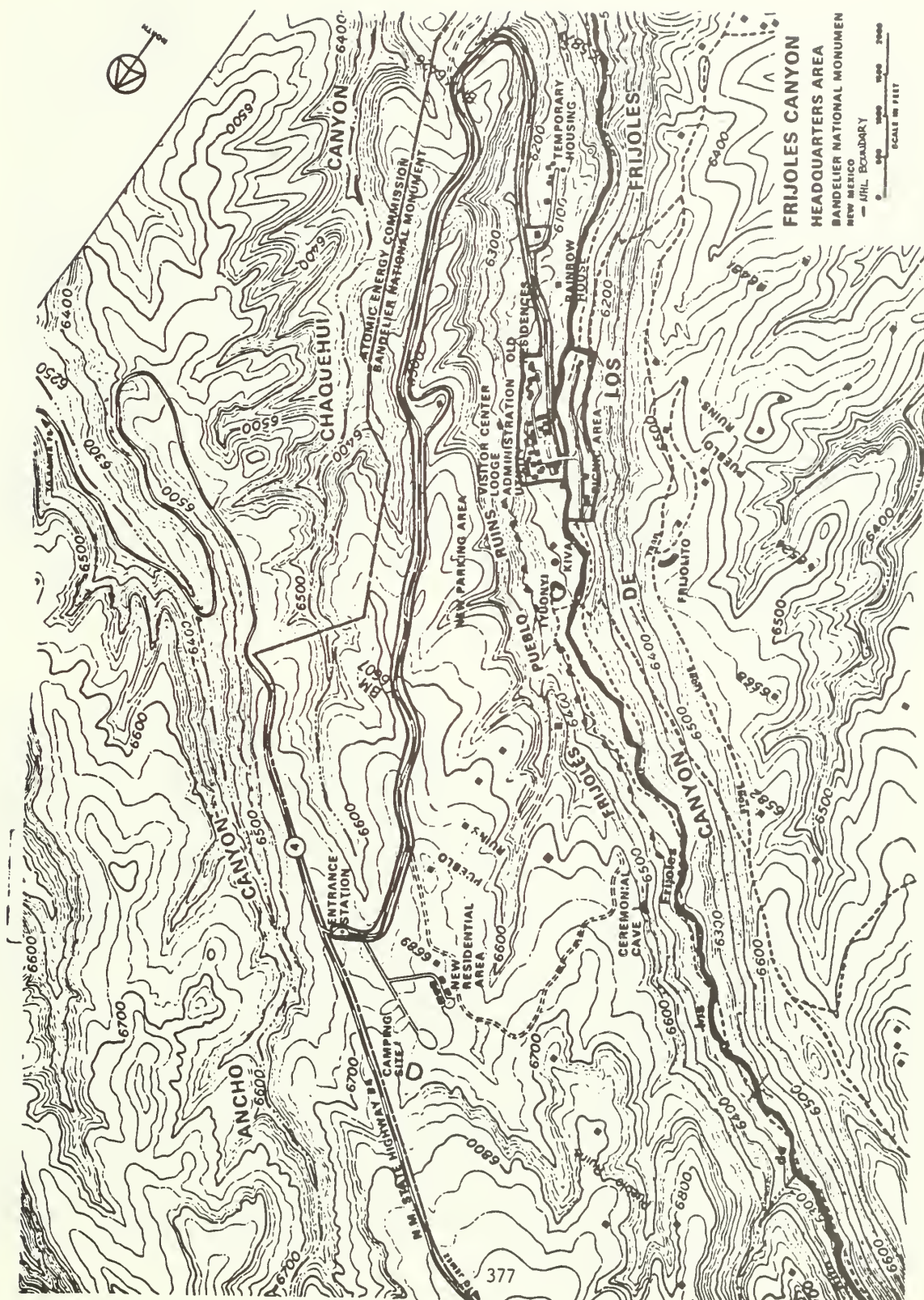


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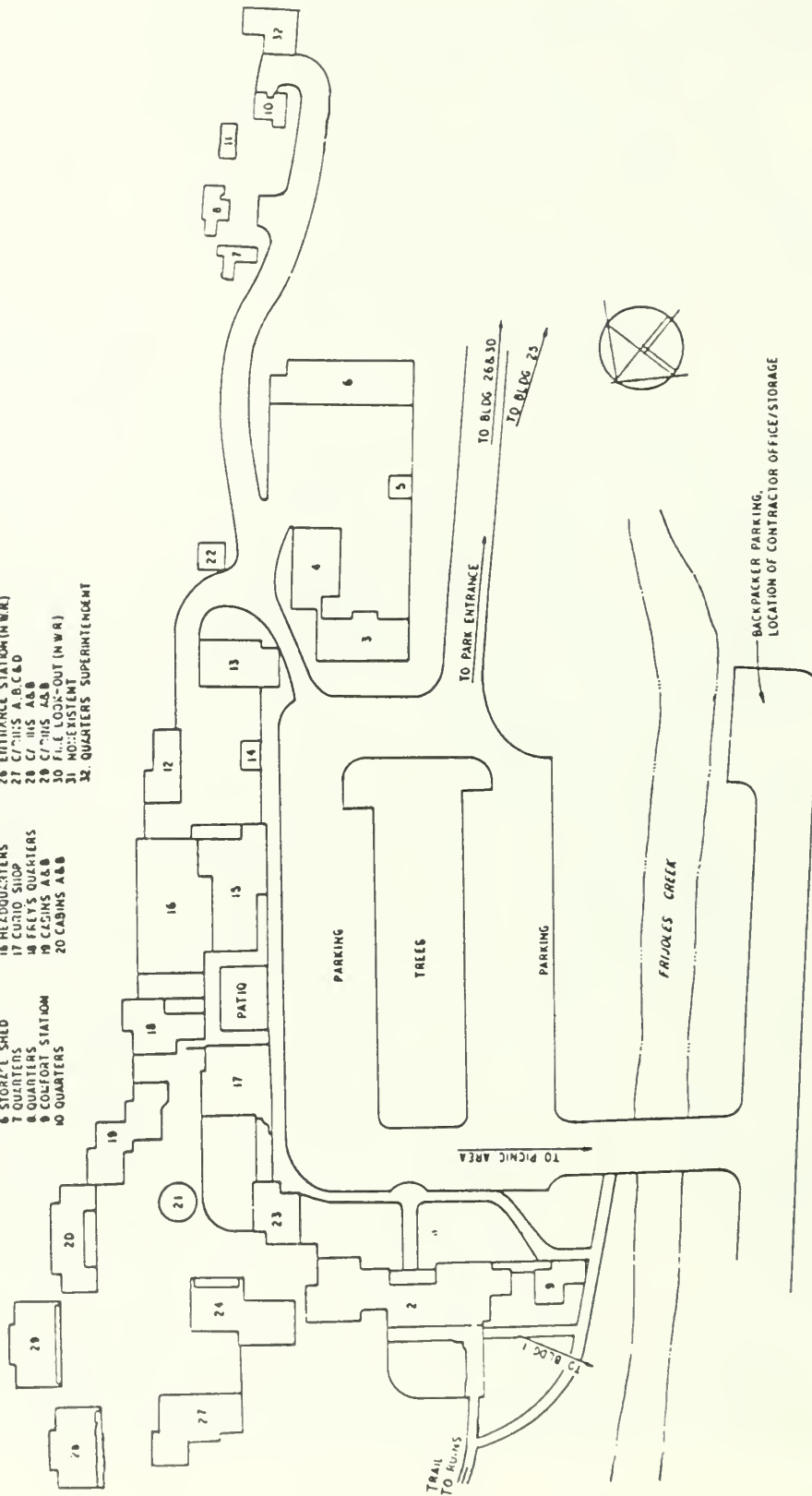
The boundary, as shown on the enclosed map, begins at a point 75 feet northeast of the northeast corner of the entrance station, then follows the road 10 feet out from the outer edge of the road approximately 7200 feet to the turn-off for the fire lookout, then follows the countour of the land at points 50 feet from the west corner and 100 feet from the south corner of the lookout, then northeast back to a point 10 feet from the outer edge of the road, then runs parallel to the road to a point 50 feet southwest of the southwest corner of the superintendent's residence, then northeast 250 feet, then north-northwest 1600 feet, then west-southwest 550 feet to Rito de los Frijoles, then north-northwest 500 feet along the western edge of the Rito, then west-southwest 300 feet, then south-southeast 2000 feet, then due east 400 feet to the west bank of the Rito, then northerly along the Rito bank approximately 1500 feet to the south edge of the bridge, then east across the Rito to a point 10 feet west of the west edge of the parking lot, then parallel to the road and 10 feet from its outer edge to the north edge of the intersection of the stable road, then along that road edge to a point 50 feet southwest of the southwest corner of the stable and corrals, then east-northeast back to a point 10 feet out from the outer edge of the road, then along the road 10 feet from the outer edge of the road to a point 75 feet southeast of the southeast corner of the entrance station, then north to the starting point.



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BUILDING KEY

- | | | |
|-------------------------|--------------------|----------------------------|
| 1 COLFORT STATION (NWR) | 11 QUARTERS | 21 KIVA |
| 2 VISITOR CENTER | 12 STORAGE | 22 POWER HOUSE |
| 3 KITCHEN | 13 STORAGE | 23 CABINS A,B,C & D |
| 4 CANNERS SHOP | 14 GAS HOUSE | 24 CABINS (NWR) |
| 5 GAS HOUSE | 15 HEADQUARTERS | 25 SIV'LE (NWR) |
| 6 STORE/LE SHED | 16 HEADQUARTERS | 26 ENTRANCE STATION (NWR) |
| 7 QUARTERS | 17 CURIO SHOP | 27 C/TH'S A,B,C & D |
| 8 QUARTERS | 18 FREY'S QUARTERS | 28 C/TH'S A,B |
| 9 COLFORT STATION | 19 CABINS A,B | 29 FILE LOCK-OUT (NWR) |
| 10 QUARTERS | 20 CABINS A,B | 31 NO: EXISTENT |
| | | 32 QUARTERS SUPERINTENDENT |



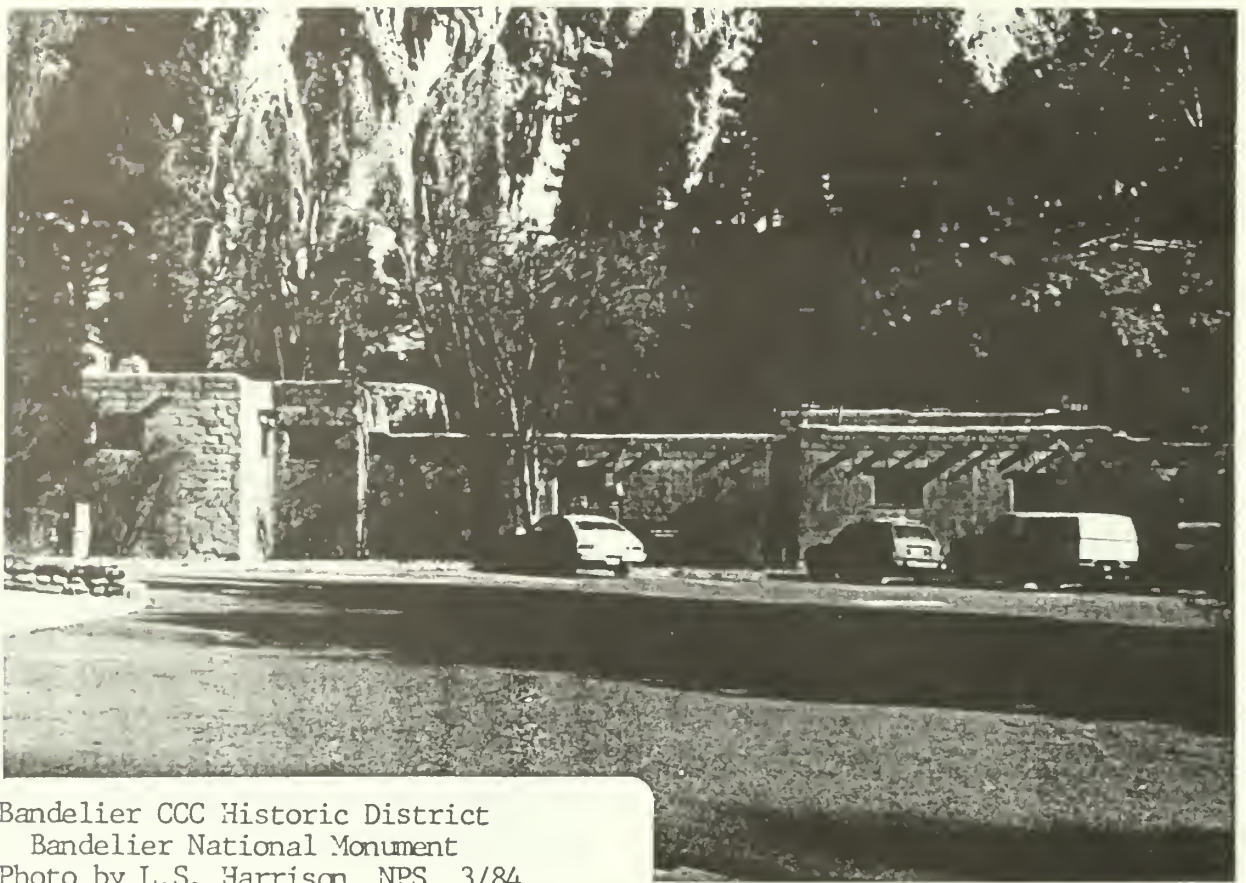
SITE PLAN



Bandelier CCC Historic District
 Bandelier National Monument
 Photo by L.S. Harrison, NPS 3/84



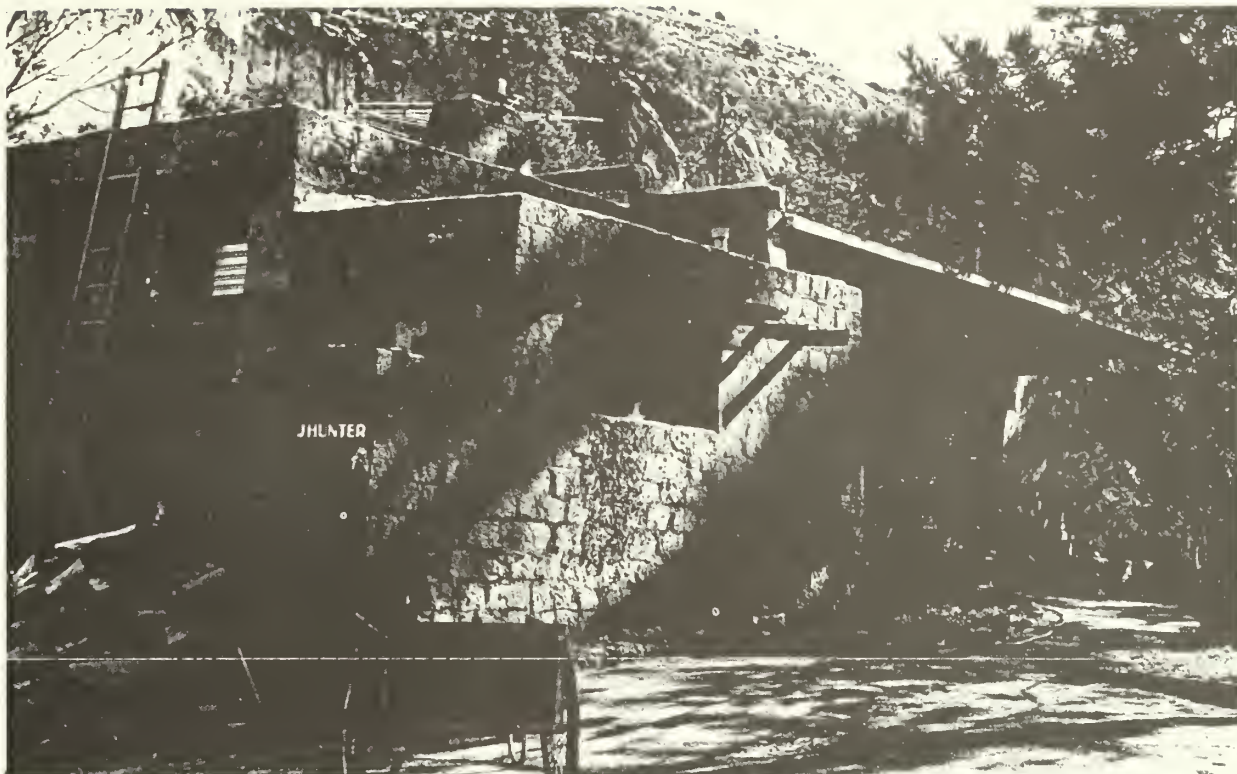
Bandelier CCC Historic District
 Bandelier National Monument
 Photo by L.S. Harrison, NPS 3/84



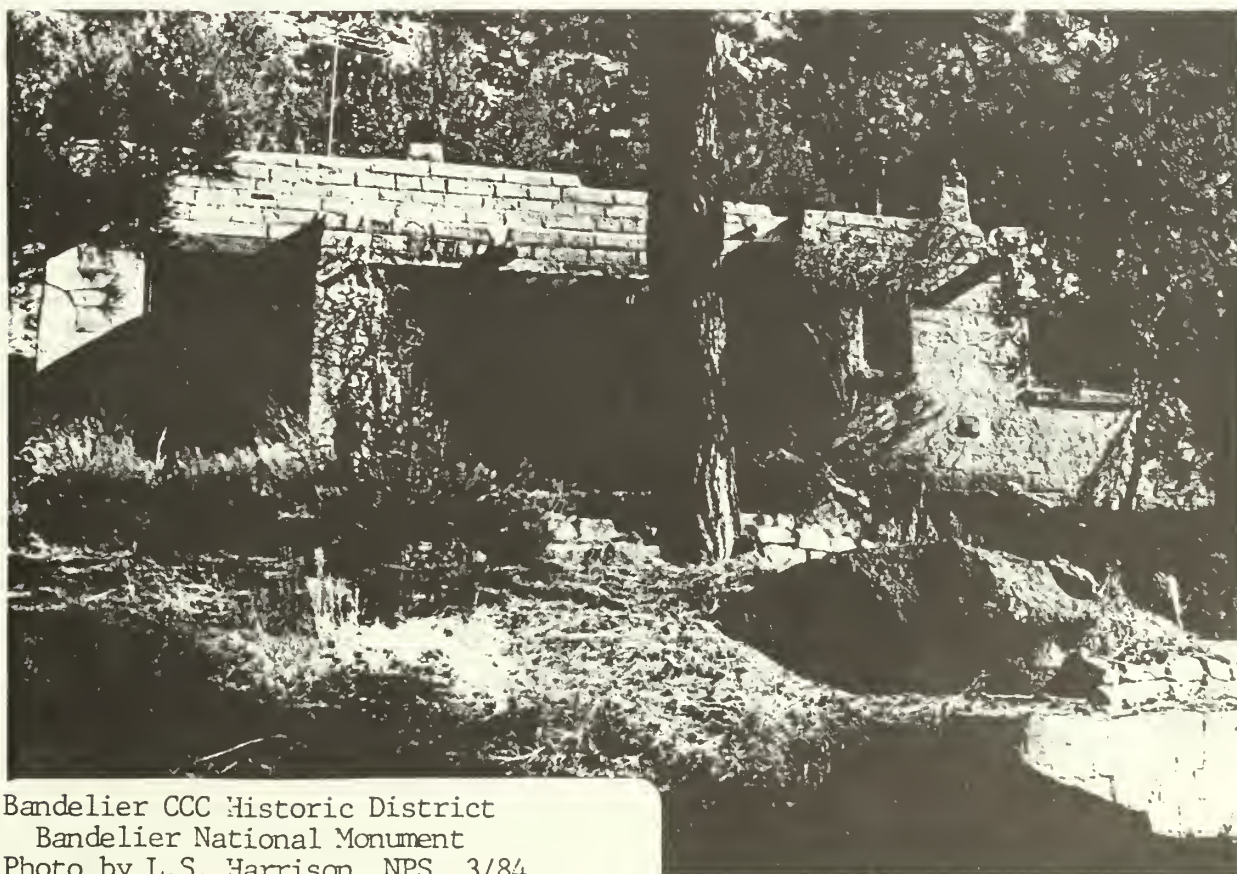
Bandelier CCC Historic District
 Bandelier National Monument
 Photo by L.S. Harrison, NPS 3/84



Bandelier CCC Historic District
 Bandelier National Monument
 Photo by L.S. Harrison, NPS 3/84



Bandelier CCC Historic District
Bandelier National Monument
Photo by L.S. Harrison, NPS 3/84



Bandelier CCC Historic District
Bandelier National Monument
Photo by L.S. Harrison, NPS 3/84

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INTERVIEWS

"Early Days in Frijoles: A Talk with Mrs. Frey, Albert Gallegos, and Manuel de Vargas," June 23, 1980.

Mrs. Frey discusses early days in the canyon, park visitors, and her orchards and neighbors. Albert Gallegos discusses how his CCC camp started in Santa Fe, how the rock was quarried, how long it took to build the buildings, how the buildings were kept by the CCC from 18 months to two years, and how the CCC men were paid \$1 per day. Much of park staff present, addressing questions to interviewees. Tape on file at Bandelier.

Interview with Lyle E. Bennett, March 10, 1985, conducted by Laura Soullière Harrison.

Mr. Bennett discusses his education and architectural work and focuses his discussion on his NPS buildings. Letters clarifying certain aspects of his interview are included in the transcript. On file at Bandelier.

Interview with Mrs. Evelyn Frey, April 10, 1984, conducted by Laura Soullière Harrison.

Mrs. Frey discusses the construction of the new lodge and the army's use of the lodge during the war for its "atomic people." On file at Bandelier.

Interview with James Fulton, August 12, 1987, conducted by Laura Soullière Harrison and Roger Buck.

Fulton recounts his days as forestry foreman for the CCC at Bandelier. On file at Bandelier.

Interview with Jared Morse, August 11, 1987, conducted by Laura Soullière Harrison and Roger Buck.

Morse discusses his short time as architect at Bandelier in the earliest days of the CCC. On file at Bandelier.

Interview with Dr. and Mrs. Richard Taschek, April 13, 1984, conducted by Laura Soullière Harrison.

Dr. and Mrs. Taschek discuss living in Frijoles Canyon Lodge during the summer of 1943. On file at Bandelier.

Walk with Mrs. Frey to Old Lodge (Ten Elders) and Ruins, June 30, 1979.

Interview by Chris Judson and others. Mrs. Frey discusses the Freys's arrival in the canyon; their facilities; the tramway; life during the 1930s; and when those atomic people came in. On file at Bandelier.

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Tour guide describing resources and tourist accommodations while the area was under Forest Service management. In Southwest Regional office library, Santa Fe.

U.S. Department of the Interior. NPS. *Bandelier National Monument, New Mexico*. Washington, D.C.: U.S. Government Printing Office, 1949.

Tour guide and minifolder describing the monument after the war. In Southwest Regional office library, Santa Fe.

FILES

The majority of data for this report came from federal files, which are in the Denver Federal Records Center unless otherwise noted. Numbered files are listed first; those without numbers are listed alphabetically. File names are listed exactly as they appear on the files; thus inconsistencies appear.

000 – General Bandelier 1934.

Includes general correspondence among Boss Pinkley, the Bandelier staff, and the San Francisco staff (Vint, Kittredge, and others) on personnel, architectural, and engineering matters; transmittal of drawings; and project approvals and stipulations. Also includes the following reports:

Miller, Hugh M. "Bandelier ECW: Report by Hugh M. Miller, Chief Clerk, to Frank Pinkley. March 16, 1934." Confidential report summarizes findings on disharmony with the army, Evenstad's hiring of Pruitt, the waterline, the entrance road, and landscape matters – all the controversies. Recommends that Boss straighten out the chain of command and give the Army and NPS the word to cooperate with one another. Also makes other specific recommendations.

Richey, Charles A., and Lyle Bennett. "Report to the Chief Architect through Superintendent of Southwestern Monuments Final Construction Report. Conservation Work – CCC Camp NM-1M November. 16, 1933 to April 31, 1934 (Second Period) Bandelier National Monument." June 19, 1934, Office of the Chief, Western Division, Branch of Plans and Design, summarizes the early ECW accomplishments. Also covered are the construction of the CCC camp, lists of personnel, description of entrance road construction, and constant digs at the engineers' work ("done against the recommendations of the landscape architects"). This copy has copious photographs and lots of margin notes (penciled in by McGill or Attwell?) pointing out discrepancies in the text. Also has good notes on historic roads through the area constructed by Abbott and Pacifico Baca before 1900.

Richey, Charles A., and Jared Morse. "Report to Thos. C. Vint, Chief Architect on Emergency Conservation Work in Bandelier National Monument, 1934 Season – Third Enrollment Period." Summarizes work on roads, trails, existing buildings (old lodge buildings and others) up the canyon, and work priorities.

"Emergency Conservation Work Camp NM-1-N. Bandelier National Monument. Proposed Sixth Period Program." August 29, 1935, Office of the Superintendent of Southwestern Monuments. Report summarizes and provides cost estimates for series of sixth period projects, from fencing and grading to construction of some buildings.

000 – General Bandelier National Monument, July 1, 1935 to December 31, 1935.

Includes correspondence: transmittal of architectural drawings and cost estimates; receipt of trucks and other equipment; transmittal of specifications; comments on drawings by fire protection engineer of the Department of the Interior and responses from park architects and landscape architects with changes in building designs.

000 – General Bandelier 1936.

Has information on fencing the monument, acquisition of fencing and building materials, building sites, transmittal of drawings, \$1,500 statutory limitation, and a "Report to the Chief Architect on 5th Period ECW Work, April 1, 1935 to September 30, 1935."

000 – General Bandelier National Monument 1937.

Communications on telephone line and waterline construction.

200 – Bandelier National Monument Miscellaneous Correspondence, March 23, 1932 to December 31, 1934.

Starts with transmittal of legislation to Pinkley. Correspondence on the road; on the acquisition of fire suppression supplies; on the possibility of setting up suppression agreement with USFS and other agencies; on stock use and grazing permits; on woodcutting and hunting violations; on the beginnings of ECW and public works programs; on the acquisition of trucks, fire tools, and the like; and on the death of the first custodian. Also contains Charles A. Richey's "Report to the Chief Architect through the Superintendent of Southwestern Monuments Bandelier National Monument and Canyon de Chelly National Monument, July 25 to July 30, 1933," submitted August 12, 1933.

200 – General Correspondence Calendar Year 1935.

Correspondence on mountain lions and why they cannot be hunted in the park; getting the Ford truck fixed; complaints about living quarters; fencing the monument to keep livestock out; CCC guide situation; utilities; purchase of car with welded section on back (for use as a pickup); wildlife concerns; interpretive matters (outside exhibits, books, etc.); topographic mapping of the canyon and other areas; and geology.

200 – Bandelier National Monument, 200 – Administration, General, February 9, 1938 to (1943).

Includes information on attempted murder of custodian Cy Harkins by a transient working for Mrs. Frey; complaints of Hub Chase (project superintendent) about Lyle Bennett (landscape architect); entrance road problems; interpretation and wildlife; interior design; justifications for retention of CCC camp; closing down the camp; poaching by Santo Domingo Indians; salvage of scrap metal for the war effort; and concern with what the army was up to in Los Alamos.

201 – Bandelier ECW, Administration General, 1933-34.

Information on ECW personnel matters; board and morale problems; fencing Tsankawi; CCC men lectured on pothunting; two truck accidents; and acquisition of 20 pack animals to service fly camps.

201 – ECW, Bandelier National Monument, Administration General, February 4, 1935 to December 4, 1937.

Information on cattle grazing; fear of lawsuit on CCC; administration of ECW; mileage and other administrative data; housing for NPS employees, pets in the canyon; payroll; and wood utilization.

204 – Reports of Inspections by Headquarters Officers.

Fire protection inspection reports; inspections and memos by Hugh Miller for Southwestern Monuments; forms 10-374, records of inspection for CCC projects; field reports for the Branch of Plans and Design (Region III, Santa Fe); memoranda for the superintendent; and travel reports by park naturalists. Covers January 11, 1939 to April 1, 1943.

204-30 – Bandelier National Monument Inspections, March 17, 1936 to December 28, 1938.

Covers development plans and utilities installations and contains "Report to the Chief of Operations on Fire Protection for Buildings, and Safety at Bandelier National Monument," August 1938, by Franch Ahern, Chief, Safety Division, Branch of Operations, NPS.

207-02 – Custodian's Monthly Reports, November 1933 to December 1938.

Weather and wildlife information, ruins stabilization, and construction.

207-22 – Project Completion Reports 1940 and July 1952. Campground – Standard Prefabricated Picnic Table and Reconstruction of Bridges.

Includes information on entrance road paving and campground rehabilitation.

601 – (CCC) Lands (General).

Has information on proposed campfire circle to be located near "threshing floor" [*sic*] and transmittal of drawings for patio drainage, operator's residence, and others.

601-03 – (CCC) Abandoned Camps, Bandelier National Monument, New Mexico.

Closing the CCC camp by phasing into USFS camp; transferring skilled workers to Chaco camp; also loose sheets on drainage structures.

601-03.1 – (CCC) Applications for Camps – Bandelier.

Contains forms 10-355 work program outlines and fill-in-the-blank justifications and 12930 general description forms. 10-355s have cost breakdowns for work units, man-days, labor, equipment, materials, and totals.

611 – (CCC) Repairs and Improvements (Fences) Bandelier National Monument.

Fencing the detached area; constructing concrete aprons around B-5; constructing flagstone walkways.

620 – (CCC) Buildings (General) Bandelier National Monument, New Mexico.

Forms on alterations, additions; 10-352s and 1-As containing project justifications and applications.

620-01 – (CCC) Administration Building, Bandelier National Monument, New Mexico.

Transmittal of drawings; 10-352; information on lobby and patio addition.

620-08 – (CCC) Checking Stations Bandelier.

Entrance roads; land problems (USFS and Bond Brothers); choice of site; and form 10-352.

620-08 – (CCC) Comfort Stations Bandelier.

Information on B-1, B-9, B-21, and the privy constructed near the entrance station; painting schedules; 10-352s.

620-35 – (CCC) Garage, Bandelier.

Information on addition of heater room to garage (B-6) circa 1939; and fire in the shop (B-4).

620-46 – (CCC) Museums.

Concentrates on museum addition rather than initial construction.

620-53 – (CCC) Power Houses, Bandelier.

Approvals, drawing transmittals, and equipment.

620-58 – (CCC) Quarters for Employees (Residences), Bandelier.

Information on the construction of employee residences including floor treatments.

620-75 – (CCC) Sheds.

Construction of wood-storage sheds in residential area; storage of Mrs. Frey's wood.

620-90 – (CCC) Stables and Barns, Bandelier.

Transmittal of drawings and other information on addition of cooking facilities and sink to apartment in stables.

620-100 – (CCC) Warehouse, Bandelier.

Drawing approvals; changes to warehouse in 1939.

621 – (CCC) Construction Projects.

Mixed bag of 10-352s; furniture and rock quarry information; sofa cushion specifications.

Bandelier 1932-1933.

Request for museum and justifications; water supply problems; early projects; early concessions permit restrictions; ECW administrative data; Vint's accident at Bandelier (five minor fractures); right-of-way data; justifications for camp.

Bandelier CCC Job Files.

Available in the monument's library, these files contain specific information on the progress of individual CCC projects.

Bandelier Fixed Property Records

Bandelier Maintenance Files

Bandelier National Monument ECW Reports and Correspondence 1936.

Organizational charts, forms, and other administrative data for March, April, and May 1936, compiled by W.H. Wirt, ECW inspector.

Bandelier National Monument Real Property Records

These government forms, available at monument headquarters, contain information about all of the buildings under jurisdiction of the monument.

Bandelier National Monument, Frank A. Kittredge, Chief Engineer, to Director Arno Cammerer, October 30, 1934.

Kittredge's reply to Richey's final construction report on the entrance road, which criticized the engineers so badly.

Bandelier NM-1 – Personnel V-1C1-b-NM.

Data on CCC and NPS personnel for 1936 and 1937.

8th Period ECW Program – Bandelier NM-1-N.

Work program outlines and cost estimates for eighth period program; arguments over project submittal between Boss Pinkley and the regional office (Oklahoma City) in 1936.

"Nusbaum's File Bandelier National Monument, cover. period of est. under NPS, studies for it (sic) enlargement to National Park Status, etc."

Extremely valuable background for administrative history. Letters among Nusbaum, NPS directors, and others very open about the politics involved. File in Southwest Regional office library, Santa Fe.

LOS ALAMOS LABORATORY

The following citations are from the Los Alamos Laboratory Records Center and Archives. They contain information on the use of Frijoles Canyon Lodge by Project Y personnel during the Los Alamos housing shortage in 1943 and 1944. Costs of meals and lodging and other administrative data are included. Because documents were pulled by the archivist for security reasons, no further reference information, such as file numbers, is available. The documents contain only the portions declassified by the Los Alamos Laboratory reviewers.

Interoffice memorandum: J.A.D. Muncy, business manager, to J.R. Oppenheimer, October 25, 1944.

Letter: Muncy to P.M. Douglas, August 4, 1943.

Letter: Muncy to Stanley L. Stewart, June 14, 1943.

Letter: Muncy to Stewart, September 25, 1943.

Letter: Muncy to Stewart, November 10, 1943.

Letter: Muncy to Stewart, October 25, 1944.

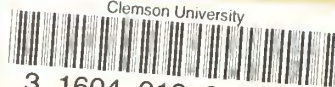
Letter: Stanley L. Stewart, Major, Corps of Engineers, contracting officer's representative, to J.R. Oppenheimer, June 22, 1943.

Los Alamos Laboratory, "Minutes of the Meeting of the Administrative Board," July 6 and 20, 1943.

Los Alamos Laboratory, "Minutes of the Meeting of the Governing Board," May 17, 24, and 27 and June 10, 1943.

United States Engineers – Project Y, "Recapitulation of Expenditures – Frijoles Canyon Lodge for the Period June 19, 1943 – Oct. 22, 1943."

United States Engineers – Project Y, "Cost Analysis for the Period, June 19, 1943 – Oct. 22, 1943."



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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